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EDITORS

Edward N. Brush, M. D.

J. Montgomery Mosher, M. D. Charles K. Clarke, M. D.

Charles Macfie Campbell, M. D. Albert M. Barrett, M. D.

Henry M. Hurd, M. D. G. Alder Blumer, M. D.

Editor Emeritus *Editor Emeritus*

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AMERICAN JOURNAL OF PSYCHIATRY

THE BROADENED INTERESTS OF PSYCHIATRY.*

BY ALBERT M. BARRETT, ANN ARBOR, MICHIGAN.

Presidential honors bring responsibilities that cannot help but weigh heavily upon the recipient. While not wishing to avoid these, I hope one may be pardoned for confessing to a feeling of inadequacy that comes to him as he prepares the address that the custom of this association expects of its presiding officer.

This feeling of inadequacy comes from a keen personal appreciation of an inability to do the task as well as he might wish and especially because of a bewilderment as he tries to collect from out the mass of present day psychiatric interests something that might be concretely considered on an occasion such as this.

There was never a time in the world's history when there was such a widespread interest in the mind and its disorders in their relation to human life in its social and medical aspects. Interest in psychology and psychiatry is no longer confined to the teachings of class rooms and laboratory investigations carried on in schools and colleges, nor to the clinics and hospitals specially concerned with mental disorders. Its scope is apparent to all who keep informed regarding present progress.

Human character and behavior is being analyzed and measured in respect to standards of mental health. Individual successes and failures, and social problems are explained, excused or condemned in terms of mental qualities. Our periodicals carry in their pages stories woven around themes of mental strangeness, and essays and discussions on social and industrial problems in which the writer sees a psychiatric problem. We have the psychological novel and the psychological play. In art and music moods and desires for expression find outlets in symbolic forms that only

* Presidential Address at the seventy-eighth annual meeting of The American Psychiatric Association, Quebec, Canada, June 6, 7, 8, 9, 1922.

too frequently disclose the psychiatric problems of their creators. Courts and schools are more and more finding it useful to apply psychiatric methods in dealing with their problems. The makers of war and the strivers for peace are being discussed in terms of psychiatric measurements, and the problems of nations and races are referred to the action of mental forces that have broken away from normal relationships and are determining great crises. So general is this appreciation of abnormal psychological relationships to the unsettled situations we are passing through in recent times, that the chief magistrate of our country seems to know that his hearers will understand when he speaks to them of passing to a period of normalcy.

To the membership of this association this awakening of public interest to questions and lines of thought that have long been foremost in our own special field of work, brings both a natural feeling of satisfaction that must come to one who attains a position in which he appreciates that he is at last being understood, and also a feeling of deep responsibility as to the share he must take in his personal concern with problems regarding which he is technically familiar.

For those of us who are in public institutional work this feeling of responsibility must be especially strong. Supported by public funds and having positions as state officials, we cannot avoid the feeling that we should take a leading part in whatever pertains to problems of mental health with the purpose of improving existing conditions and lessening future dangers.

The extent to which psychiatric problems enter into our social relationships has been revealed to us in the considerable number of studies that have been made upon the relation of mental abnormalities to specific conditions. These have shown the part that feeblemindedness and subnormality have in the problems of the public schools, the high proportion that mental abnormalities have among juvenile delinquents, adult criminals, and the socially inadequate, and in various ways we have been made familiar with the fact that in our social group there is an appallingly large amount of mental subnormality and neuro-psychiatric disorders.

It has been shown in special studies that in social and industrial unrest and upheavals, the mentally abnormal find opportunities for outlets for their own personal bitterness and too often the

psychopathic individual by his affective energy gains the position of leadership and molds the view of the masses into the form of his own unhealthy thoughts.

In the great military crisis through which the world has been passing it has been shown in most impressive ways the part that psychiatric medicine can have in both the preparation of an army and the maintenance of its health. In a wonderful experiment psychiatric standards were used to determine qualifications of personal efficiency and for the first time in history, in any large way, attention was given to the special consideration of nervous and mental illness of the soldiers.

What neuro-psychiatry did in the last war has shown beyond question that this branch of medicine must be given a permanent part in the medical organizations of the army. With the ending of the war came another problem that psychiatric interests had to consider. The stress of war must always have had a serious effect upon the mental health of those engaged, but probably never to the extent that occurred in the last war. Never until now did this receive attention as a special problem for treatment. To furnish this has drawn heavily upon the psychiatric resources of the country both in medical personnel and hospital provisions. It has also been obvious that the most helpful means that the government has of adjusting the many claims that are made upon it for war disabilities is a psychiatric understanding of the personality of the claimant.

Psychiatric problems are no longer limited to the formal psychoses and mental disorders that heretofore have been the main interest of the psychiatrist either in institutional work or private practice. They embrace all those tangible and intelligible factors that are impairing normal mental health and character and in their influences are disturbing the smooth course of social progress.

Insanity and mental defectiveness, dependency and crime, social maladjustments and unhealthy mental attitudes are but expressions of a common group of problems that have as their units personalities that have found it impossible to control their mental attitudes and behavior by reason of a variety of causes.

The situation that is presented to us is that there is recognized more than ever before an aspect of human relationships that has been given little attention. Qualities that have heretofore been

intangible or could only be dealt with in composite relations, now are recognized as phenomena and results of intelligible physiological and psychological processes. Human behavior has become resolvable into elements that are as liable to abnormalities as are the organic functions of the body.

The personality thus becomes a problem for pathology that may be studied by the methods of science and medicine. Its difficulties both in individual relations and its social contacts can be dealt with by methods familiar to us in our usual psychiatric practice.

This viewpoint promises much for a more effective handling of many of the great problems that are troubling our social life. Thus the interests of the psychiatrist, whether in hospital or private practice, must be concerned with wide human relationships that are determining human conduct and are marring or perfecting the normal shaping of character. The distinction between what is a psychiatric problem for treatment in an institution or in the free community is largely a question of degree of social adaptability and not specific differences. The interests of the institutional psychiatrist cannot solely be confined to the problems of the patients in his hospital alone. The community needs his experience and training and he needs a field for his activities far broader than he has had in the past.

Hospitals for mental disorders now have placed before them opportunities for service in public health relations which they must appreciate. Their administrators must be alive both to the need of taking an interest in the part that mental disorders have in community social problems and to the necessity of adapting their institutions to new lines of work that have opened up.

Instead of continuing in the passive position of being concerned only with medical problems delivered to them through formal procedures of the law, they now can assume an active interest in dealing with mental disorders in extra-institutional relationships.

The question arises in what way can institutional psychiatrists find practical ways of utilizing their experience and interests. To point out specific directions is not easy. So much depends upon local opportunities and special situations. Conditions and causes are far easier to appreciate and discuss than to find methods of

dealing with in concrete and effective ways. No far-reaching program can be proposed nor is any extensive formulation essential. Efforts should be made as one has opportunities and where science and sound experience show something may be done. It can at least be urged that each psychiatrist whether in institutional work or in private practice establish such contacts as may be possible with organizations and movement dealing with problems of behavior and of making widely available his experience and the facilities he can control. For a long time to come one must rely largely upon what are designated as educational efforts. These involve bringing to public attention information that will make possible an appreciation of what produces disordered mental states and what measures can be taken to assure healthy development of mind and character. The psychiatric viewpoint should be urged upon all organizations dealing with behavior problems and they should be provided with facilities for psychiatric examinations. General hospitals and dispensaries should have psychiatric services co-ordinated among their medical specialties. Facilities for examination and treatment of psychiatric disorders should be as readily available to the people of our communities as those for medical or surgical conditions. The circumstance that the historic development of psychiatry has centered largely in and about public and private hospitals for mental disorders makes it necessary to rely largely on their interests and energy for the extension of psychiatric activities.

Practical ways of accomplishing this are already in evidence in the development of out-patient services in relation with a number of public hospitals. Their number is deplorably too few and there is urgent need for their more general development throughout the country. There are few state hospitals that are not in a position to do this. It will be found that such services will be most stimulating to the medical staff of a hospital and will be of great value to the hospital in bringing its interests in contact with aspects of psychiatry that cannot be provided within its walls. Their value to the community and people of the state is inestimable. It is an unfortunate circumstance that by far the greater number of mental disorders that are seen in state mental hospitals have reached a degree of development that makes treatment difficult and too often hopeless. The psychiatrist, as he looks back

into the history of the individual patient, sees factors shaping the disorder he is now called upon to treat, that have been active through a long period of time and in clearly intelligible ways, but with these neither he and often no physician has had any contacts. This same situation exists in all general and special hospitals in their relation with patients. It is, however, of far greater concern to the psychiatrist. His problems for the greater part cannot be limited to the manifestations of the disease of his patient solely in its hospital phase. They are intimately intermingled with the entire life experiences of the patient. Without some knowledge of these, efforts at treatment must be more or less blindly directed. Such information can only be gained through some agency working as a liaison between the hospital and community.

As contacts with the environment and family relations are established one is continually being confronted with concrete instances of family abnormalities and disease that stand in more or less direct relation with the disorder of his patient. The most tangible of these is the interrelation of familial and conjugal syphilis with the paretic patient admitted to hospitals. It is impossible for the hospital physician not to feel some personal concern for the proper care of disorders revealed in the families of his patients especially when these are such as can be benefited by proper treatment or in future will become problems that will require institutional care. Some machinery must be developed for dealing with these relations, and state administrators must clearly recognize responsibilities that mental hospitals must have for disorders of mind and conduct aside from the care of patients formally committed to their care for custody and treatment. At the present time the best methods for accomplishing this are in the greater development of out-patient services from existing state hospitals, the operation of traveling clinical services that shall give small and isolated communities opportunities for psychiatric examinations and advice and the establishment of public psychiatric dispensaries under the control of general hospitals or supported by public or private funds.

It is becoming appreciated by our better psychiatric hospitals that the population of our hospitals could be greatly reduced and the best interests of the patients served if non-institutional care

could be properly arranged for them and that in the future one must expect a limit to institutional development and a far greater extension of agencies and methods for community care and supervision. A better understanding of mental disorders has shown to us the phase-like character that distinguishes the course of some of the more common disorders, notably the dementia præcox group, manic-depressive psychoses and general paresis and that requirements for treatment and care vary much in different aspects of these disorders.

Were efforts of treatment directed not so largely in the spirit of bringing about a cure, but somewhat more than is customary with the purpose of securing as great a social rehabilitation as possible by shaping of habits and behaviors, much could be accomplished towards reducing the needs of institutional care.

Psychiatry has such varied aspects that it is to be expected that the field will attract many workers who are not of medical training and there are possibilities that it will be largely dominated by interests that are not soundly rooted in medical science and experience. Although a large part of psychiatric problems are not essentially medical, it is for the best interests of psychiatry and for the patient that it continue as a branch of medicine. Only by doing this can its scientific development and safe practice be assured. Health problems of body and mind are so interrelated that there is justification for the hope that the concept of what is to be included in the field of medicine may be extended to include whatever is preventing the individual from maintaining normal behavior.

The non-medical worker dealing with problems of behavior in schools, social and court relations, must be trained to appreciate this interrelation of disease with abnormalities of mind and character. Such experience can best be provided in courses given in schools and universities or in the specialized clinics. There is urgent need that educational institutions give early attention to the development of adequate instruction in these subjects. All such courses should be developed with a well-balanced attitude towards the various forces determining problems of behavior. It has sometimes seemed as if schools and training courses were perhaps placing too much weight on the importance of purely intelligence deficiencies as a cause for character and behavior

abnormalities and overlooking the great importance that affective influences and abnormal traits of personality interrelated with definite disease processes of the body organs had in shaping these problems.

There is also an urgent need of giving adequate instruction in psychiatry in the curricula of the law schools of the country. It is in the field of the law above all others that problems of personality stand so largely in the foreground. Psychiatric experience, better than any other, points the way towards adapting the theory and practice of the law to the changing needs of human society.

If psychiatry is to remain a medical subject then physicians must be adequately trained in this field. Not that they are to become specialists in mental disorders, but to provide them with knowledge that will enable them to recognize and appreciate in their true values mental interrelations with disease and those mental traits and symptoms that give warning of oncoming psychotic disorders.

It is the physician in general practice who comes most intimately in relation with the family unit and in this relation he can do much towards the prevention of mental disorders. The recognition of a psychosis after it has developed is no difficult problem, but too often at this time the possibilities for successful treatment are most discouraging. Hope for the individual lies much in the early detection of abnormalities of mind and nervous system and in bringing them in contact with what medical experience has shown to be useful. Furthermore, it is the physician in general practice who must often carry on the supervision and treatment of patients who are discharged to their families partially rehabilitated. The more family physicians understand even in limited extent psychiatric medicine, the more generally can patients be discharged from institutions to home and community care.

It is always helpful in the progressive development of any science that from time to time its current conceptions should be reviewed and checked by new advances in knowledge and its problems rearranged in new levels that may have been gained. This is especially needed in psychiatry whose interest in two fundamental aspects of life, the psychic and the physical, give a keen desire to correlate the mysterious forces determining behavior, with tangible physical processes, and to seek for explana-

tions that will explain psychic activities in terms of structure and organic functioning. The history of psychiatry has shown how such tendencies easily lead to drifting into speculations and the formulation of theories that have not always been firmly moored to scientific facts and experiences.

Psychiatry to-day is in a position that makes it possible to bring to the solution of its problems a far wider range of information than ever before. Its interests have been immensely broadened in the general recognition that the problems with which it deals are essentially psycho-biological in their relations. Concisely stated, the problems that interest psychiatry center in the efforts of the personality to adequately adapt itself through its mental functioning to the demands of the social situation in which it must exist. Such a viewpoint brings it in contact with whatever deals with life in its personal and social relationships.

The new level that has been gained has opened up possibilities for explanations and interpretations of the mechanisms shaping psychiatric problems in ways never before possible. Psychiatry finds its interest in whatever can contribute to an understanding of any aspect of its problems. It has found that the problems with which it must be concerned in any specific instance have been shaped by a most complex interacting of forces and factors. On the one hand, it must be concerned with an understanding of the individual himself as a personality whose constitution has been determined by both physical and mental influence acting through the entire period of his evolutionary progress. On the other hand, it must have an understanding of all those influences within himself or in his environment that have acted to bring about his pathological situation.

The personality becomes intelligible to us only when we know what past ages have contributed during evolutionary progress to the shaping of its structure and habits of psychic reaction. How racial stocks and genetic factors have determined the quality of its constitution. The individual himself becomes an object of study in his physical structure and nervous organization. One must know the normal and abnormal functioning of body organs and the pathology of disease as a general problem and in its specific interrelations with the individual. The mind itself as the directing force of the individual must be studied in its interrelations

with problems it has to meet from abnormal structural relations in its own body and in its experiences in its social relationship.

With such an array of sources to which we must look for help in understanding what is involved in the mental disorder of an individual, how considerate one must be towards special lines of investigation and interests and how impossible it is for one to say in this or that direction the solution of our problems will be found.

Researches in the pathological laboratory will give their contributions, but they cannot explain the content of thought of the patient during life. The psycho-analyst as he unravels the interrelations between feelings, thought and behavior, gains no understanding of the structural condition of the nervous system or body. The physiologist and chemist may help much in correlating structure and function but they can tell us nothing regarding the personality as a whole.

The problem as a whole can only be understood with any degree of completeness by a well balanced appreciation of all of the factors that enter into the shaping of the personality and its pathological changes. It is a question of balances and interrelations not of one factor alone, but of the effects of many upon the entire synthesis of the personality in its organic and functional relations. Bleuler has clearly stated this conception in his "Physical and Psychic in Pathology" where he comments that "the psycho-pathological syndromes that are produced solely by physical or solely by psychic factors are rare exceptions. For the ordinary case the question of whether it is organic or functional is wrongly formulated. For this must be substituted the question how much of it is organic and how much is functional." The situation is much the same in regard to problems of therapy. The evaluation of results from special methods of treatment must always be judged with a clear appreciation of the complexities involved in a given case. Improvements and recoveries may occur entirely without relation to a particular line of treatment. Often therapeutic efforts directed towards one aspect of a disorder may so alter the situation that readjustments may occur without any specific relations to the particular methods of treatment employed.

What hospitals and clinics are to contribute to an understanding of psychiatric problems will depend upon the personal interests of the medical staff and the facilities at their disposal. Differences in location, in material and personal qualifications for special lines of work will determine what may be done.

The lack of contribution to the knowledge of our special field cannot be excused entirely by lack of financial resources, of time or elaborately equipped laboratories. It is largely a matter of the earnestness of the interest of the medical staff in the psychiatric problems of their patients. Few institutions will be able to plan an extensively developed program for research. Lack of resources and the difficulties of maintaining a stable force of those qualified for special research will prevent this. But in every institution there are possibilities of doing something if only in limited ways that will contribute to a better understanding of the problems with which we are concerned. Comprehensive programs can well be undertaken by a few special hospitals or clinics, and it is earnestly hoped that there may be established in this country one or more institutes modeled after the recently established "Deutscher Forshungsanstalt für Psyciatrie" in Münich. Here, under the direction of Kraepelin, the interests of the institute will be centered on investigations in psychiatric problems in wide relationships.

Hospitals for mental disorders are at the present time finding it increasingly difficult to obtain an adequate number of physicians for their medical work. They now come into competition with a far larger number of institutions and medical organizations than ever before for the services of recent graduates from medical schools. It is not a lack of interest in psychiatry as a medical subject that fails to attract physicians to our hospitals for mental disorders. A personal experience of many years as a teacher of psychiatry has convinced me that students are keenly interested in their college work in psychiatry and yet it is not easy to arouse in them a desire for institutional practice. Whatever may be the cause of this, our hospitals for mental disorders must do everything possible to make their medical services appeal to the interests of the recent graduate. I cannot get away from the belief that the strongest appeals will come from those institutions that maintain the highest psychiatric standards and offer the best facilities for research work and an

atmosphere in which the enthusiasm and interest for science developed during the medical course may find opportunities for growth. Too often this enthusiasm and interest is lost or dampened in the first year's experience in hospital work by having medical interests too much subordinated to routine administrative demands or they wither in an unsympathetic medical atmosphere. For this our hospital methods are much to blame.

While there is nothing that will stimulate the medical spirit of a hospital as interest in research, there is sometimes danger that energies expended in research will go out into lines that have not a very close psychiatric application. It should never be forgotten that the primary interests of a hospital for mental disorders are neuropsychiatric and that interest in side lines, while contributing to medicine and science in general, adds little to psychiatric knowledge. This tends to make psychiatric activities too diffuse and easily leads to making false correlations.

In the ideal institution the superintendent should be the leader in its psychiatric activities. He should be in the fullest sense of the word the medical director of his institution. This would do much towards maintaining a keen and alert medical interest among his physicians and would give an atmosphere to his institution that could not be obtained in any other way. Unfortunately too many superintendents have allowed their psychiatric medical interests to be overwhelmed by the ever-pressing needs of administrative responsibilities. American psychiatry has suffered much from a loss of accumulated psychiatric experience when assistant physicians promoted to the position of superintendent have felt themselves obliged to give up active personal contacts with psychiatric problems of their patients as they assume new responsibilities.

Whatever concerns psychiatry in any of its aspects must be a matter of interest for our association. Its interest must broaden with changing conceptions and new viewpoints. That this has been characteristic of the history of this association must be apparent to one as he familiarizes himself with its past interests and progress.

This association had its inception in the mutual interests of its founders in the humanitarian aspects of the care of the insane as a class. Medicine at that time had no large body of scientific facts that could aid in the solution of the problems of their patients. Speculative theories and metaphysical conceptions largely dominated

the interests of psychiatry of that period. As the Association of Medical Superintendents of American Institutions for the Insane it stressed in its programs for many years administrative problems but in succeeding time tended more and more to show an interest in specific medical aspects of its work. It is of interest to note that it had from its earliest beginnings an appreciation of what we now regard as social aspects of psychiatric work. Its programs usually carried discussions on medico-legal relations of insanity and at its second meeting it undertook a statistical study of the interrelation of suicide with insanity. The change of the name of the Association in 1892, when it became the American Medico-Psychological Association, marked the broadening of its interests and a more specific statement of its concern with mind in medical relationships. Again in the progress of time it comes to a new period in which psychiatry has shaped for itself a definite position as a branch of medicine and as The American Psychiatric Association it starts on a new epoch in which its interests are extended to include all that concerns mental disorders in their widest relationships, as problems of disease and their social effects.

Our social group bears inheritances from past times that have weakened as well as strengthened the quality of its members, and our civilization in its progress brings stresses that cause many of its members to break in mind or body. Its existence is continually threatened by numerous social ills that can, in our present knowledge, only be understood and given help through psychiatric methods.

Psychiatry has gained the position of a liaison science between medicine and social problems. The progress of its development in this country rests at the present time largely in the hands of the members of this association.

In bringing to a close what I keenly feel has been a discursive rambling among thoughts that must be obvious to you all, I must express to you my deep appreciation of the honor you have shown in giving to me the privilege of presiding over your deliberations. It is no easy task to maintain the standards that have been set by the long series of Presidents of your Association and for what shortcomings I may have I bespeak your kindly forbearance.

NEW EVIDENCE FOR SYMPATHETIC CONTROL OF SOME INTERNAL SECRETIONS.*

By WALTER B. CANNON, M. D.,
Professor of Physiology, Harvard Medical School, Boston, Mass.

The history of medicine has repeatedly emphasized the fact that in order to appreciate fully the nature of abnormal function we must have detailed knowledge of the normal. Indeed, knowledge of the normal establishes the standard whereby variations from it are recognized. And furthermore, by learning the conditions which influence the physiological phenomena favorably or unfavorably, we gain insight into the character of the pathological disturbances. How acquaintance with natural processes gives us greater precision in judging unnatural or disordered action is well illustrated in gastric digestion. Use of the vague word "dyspepsia" was justifiable when physicians merely noted that the stomach failed to alter the ingested food or to empty itself. But after the discovery of the nature and function of gastric juice, after the importance of vagus impulses in calling forth gastric secretion and maintaining tone in gastric musculature had been made clear, after studies on lower animals and man had proved that the pleasurable smell and taste of food were favorable to the proper course of digestion if the vagus pathways were intact, and that pain, worry and great excitement were capable of stopping the whole digestive process if the sympathetic nerves were intact, after these facts were established, discrimination between different kinds of digestive disorder became not only possible, but necessary for proper treatment.

In much the same way we must know about the natural history of emotions, the occasions for their onset, their modes of expression, their attendant visceral effects, and the possibility of modifying them, before we shall be in a position to judge completely the character and degree of abnormal emotional disorder.

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Unfortunately, in spite of its great importance the study of emotions has been much neglected. The phenomena presented are both physiological and psychological. The physiologists, however, have left the field to the psychologists, and the psychologists, after touching on the superficial physiological aspects, have busied themselves with theorizing about the nature of emotions and with attempts to classify emotional states. In the intermediate territory between sciences, as illustrated by astrophysics and physical chemistry, for example, some of the most interesting problems are to be found. And this is especially true, I think, of psychobiology, the field in which emotional experience lies.

If we accept McDougall's suggestion of an alliance between emotions and instincts, we may regard the totality of an emotional experience as consisting of three parts or stages. First, there is the subjective state. Any one who has been in the grip of intense anger, for example, knows the typical feeling tone of that state. Second, there is the group of bodily changes. The earlier interest in this aspect of the complex stressed the typical expressions of the face and the postures of the trunk and limbs. But besides these superficial changes, more or less under voluntary control, there have been revealed profound disturbances in the internal organs quite beyond any government by the will. And third, there is the instinctive behavior—the flight in case of fear; the attack, in case of anger—that forms the culmination of the preceding events. Note that this third aspect also is more or less capable of being checked or quickly stopped.

Professor James, in his theory of the nature of emotion, attributed the first of the aspects mentioned above, the subjective, to impulses aroused by the bodily changes. He did not sharply distinguish the second and third aspects which I have just mentioned—for he said that we feel sorry because we cry (a gland disturbance) and we feel afraid because we run (an instinctive act). Since the James theory was first argued, however, we have learned a considerable number of new features of the bodily changes which attend great excitement. Especially is this true for the location of the nervous mechanisms involved, and for the extent and variety of the visceral disturbances. Indeed, viscera, the products of which have widespread effects on bodily processes and which thirty years ago were not suspected as playing

any part in the emotional response, are now known to be innervated by that part of the nervous system which goes into action in times of emotional stress. Such are the endocrine glands—for example, the adrenal medulla, the liver, and the thyroid gland. We now know that the substance, adrenin, poured into the blood stream by the adrenal medulla, is capable by itself of reproducing the visceral alterations characteristic of the major emotions. Adrenin can accelerate the heart beat, increase arterial pressure, shift the blood from the abdominal organs to the limbs, stop the motions of the gastro-intestinal canal, check the secretions of the digestive glands, dilate the bronchioles, augment the sugar content of the blood, and besides these effects, can speed up the rate of metabolism, hasten the clotting of blood and quickly abolish some of the effects of muscular fatigue. The liver is now known to contribute to the circulation not only glucose from its store of glycogen, but also a protein substance, which has both a cardio-accelerator and a pressor effect. And the thyroid gland we now recognize as the chief regulator of the speed of oxidative changes in the body.

With the possibility that these glands of internal secretion can be brought into action under emotional excitement it becomes a matter of importance to secure evidence that they actually do secrete their peculiar products when sympathetic nerve impulses are discharged. The sympathetic system is activated not only during strong emotions, but also as a consequence of asphyxia and of reflex "painful" stimulation (*i. e.*, stimulation of afferent nerves, even though anesthesia is complete). These latter conditions, therefore, may properly be regarded as testifying to the influence which the emotional state would have. With this understanding I propose to consider the evidence for sympathetic control of the internal secretion of the glands I have mentioned.

Evidence for Sympathetic Control of the Adrenal Medulla.

Although earlier investigators had shown that stimulation of splanchnic nerves evokes a secretion of adrenin from the adrenal medulla into the blood stream, the first evidence that such secretion occurs under physiological conditions was obtained by de la Paz and myself in 1911.[1] It was known that an excised intestinal strip, contracting rhythmically in oxygenated Ringer's solution,

is promptly inhibited by very minute doses of adrenalin. We found that it was likewise inhibited by blood which was removed from the inferior vena cava in the neighborhood of the lumbo-adrenal veins during or immediately after excitement. When the blood was removed from the same region in the same animal before excitement, or while the animal was calm, the effect was not seen. The conclusion was drawn, therefore, that the adrenal medulla discharges into the circulating blood its peculiar product, adrenin, during periods of emotional stress. Later Hoskins and I showed that asphyxia and stimulation of sensory nerves, both procedures known to cause discharge of sympathetic impulses, as already pointed out, would induce extra adrenal secretion.[2] The evidence thus obtained was confirmed by various observers using a variety of methods.

The methods and the results leading to the conclusion I have just stated have been criticized by Stewart and Rogoff. They have declared that the output of adrenin from the adrenal glands is not increased by asphyxia, by reflex stimulation or by excitement; indeed, that the secretion is constant and unchangeable.[3] Such is the testimony of their method of experimenting. And they urge that it is impossible to judge whether the secretion is increased or decreased unless the rate of blood flow is known. Thus if the secretion is *constant* and the flow is *decreased*, the concentration will be *greater* in any assay made outside the body. I shall not now defend the method which we employed, though it can be defended by use of recent evidence that the blood flow in the inferior cava is, in fact, *increased* under the conditions cited,[4] so that the tendency would be not to concentrate a constantly secreted adrenin, but rather to *dilute* it. In other words, the conditions of blood flow are unfavorable to the result which de la Paz, Hoskins and I actually found.

Instead of elaborating a defense of the earlier work I wish rather to present new evidence obtained by use of the denervated heart as an indicator of adrenal secretion. In this preparation both vagus nerves are severed, the stellate ganglia are removed, and the heart itself, wholly separated from the central nervous system, remains in the body performing its function, but no longer subject to any influences except those brought to it in the blood. The heart thus isolated is extraordinarily sensitive to circulating

adrenin. A few ten-thousandths of a milligram of adrenalin injected intravenously into a cat will have a marked effect on the rate of beat.

If the temperature of the animal is kept uniform, and nothing is done to disturb its physiological state, the pulsations of the denervated heart remain uniform through several hours of observation. Within a few seconds it can be made to beat faster by 30, 40 or 50 beats a minute, and more, by means of reflex stimulation, asphyxia or excitement.[8] This increase fails to occur, if the adrenal glands are removed and the nerves to the liver are severed.

Again Stewart and Rogoff have objected that the faster beating of the denervated heart can be explained by a "redistribution of blood in the body." Stimulation of an afferent nerve, they argue, constricts the splanchnic area and thereby lessens the amount of blood flowing in the inferior cava; the uniformly secreted adrenin is thus concentrated and therefore becomes more effective. This argument Rapport and I have put to test.[9] We made what we have called a "reduced" animal, *i. e.*, we tied both carotid, both brachial and both renal arteries, closed the aorta below the renal branches, and cut all the mesenteric nerves. Thus vascular reflexes were nearly abolished by the exclusion of the responsive areas, and the adrenal glands were the only abdominal viscera that remained innervated. Under these conditions stimulation of a brachial nerve evoked typical reflex accelerations of the denervated heart—an increase which failed to occur after the adrenal glands had been removed. The more rapid beat obviously could not be accounted for by a "redistribution of blood in the body," for the possibilities of redistribution were lacking.

Again, Stewart and Rogoff have argued that their negative results should be accepted rather than the evidence for reflex discharge of adrenal secretion, because their method was quantitative. I have elsewhere called attention to their admission that they were assaying adrenin in blood after losing an unknown amount of it while preparing it for the assay. Rapport and I have also employed a quantitative method. We found that the denervated heart in the "reduced" animal can be employed to determine the amount of adrenin in the blood. Repeated equal doses injected intravenously at a uniform rate repeatedly pro-

duced in a given animal the same or nearly the same maximal increases of heart beat; and if the injections differed in rate, the increases likewise differed in degree. By matching the effects of injecting adrenalin with the effects of reflex adrenal secretion we have shown that when the heart rate is accelerated between 30 and 40 beats per minute, the output from the adrenal medulla lies between 0.0032 and 0.0037 milligram per kilo per minute, *i. e.*, it is more than ten times the amount regarded by Stewart and Rogoff as the unvarying normal secretion when assayed by them in the blood removed from the body.

The evidence given above should be wholly convincing. The doubt of a physiological control of adrenal secretion has been so widespread, however, that recently Carrasco and I have performed another series of decisive experiments.[7] We tied off the renal vessels and the abdominal aorta and the inferior cava below them; we tied all the vessels about the adrenal glands except the main artery and vein; we cut the nerves to the liver. Thus the only organs connected with the inferior cava below the liver were the adrenal glands. With this preparation, either stimulating an afferent nerve or producing asphyxia caused acceleration of the denervated heart. If now the inferior cava was clamped above the mouths of the adrenal veins, and the stimulation was repeated, the faster beat failed to occur. On removing this block, however, it promptly appeared. That the failure of the heart to accelerate during the block was not due to any damage done by the clamp was proved by obtaining again, after its use, typical reflex and asphyxial increments of the heart beat.

From the foregoing evidence we are justified in drawing the conclusion that secretion of adrenin is evoked by asphyxia, by reflex stimulation and by emotional excitement, in an amount capable of influencing the viscera just as they are influenced by the sympathetic nerve impulses.

Evidence for Sympathetic Control of the Liver.

In describing the experiments on reflex adrenal secretion I have repeatedly mentioned that the nerves to the liver were severed. That stimulation of the hepatic nerves calls forth a discharge of sugar into the blood has long been known. Recently Uridil, Griffith and I[8, 9] have shown that such stimulation causes an increased

rate of the denervated heart, an effect appearing slightly later than the similar effect from secreted adrenin and lasting for a longer time. Simultaneously there occurs a rise of blood pressure. This is not due to a retarding of the blood flow through the liver, for it fails to appear on closure of the hepatic artery or the portal vein or the two vessels together, and it does appear on exciting the hepatic nerves though all the abdominal viscera, except the liver, have been removed. Since the only connection between the liver and the heart is the blood stream, some agent passed into the blood from the hepatic cells must produce the observed effect. This conclusion has been confirmed by collecting blood from the liver during stimulation of its nerves, and noting that when this blood is injected into the inferior cava thereafter, the heart beats faster—an effect not produced by blood taken in the same manner but without exciting the hepatic nerves.

The increments of heart rate provoked by hepatic stimulation vary widely. They are slight if the animal has been fasting or is in poor condition. They are much greater if the animal has been well fed on meat and is digesting meat. At first it seemed probable that some product of protein digestion was either allowed to pass the liver, or, taken out of the blood by the hepatic cells, was quickly released when the nerves were stimulated. Experiments proved, however, that none of the amino acids introduced into the intestine or the circulation had the effect of promptly increasing the efficacy of hepatic nerve stimulation in augmenting the heart rate. The result, therefore, seemed to be due to some substance elaborated in time by the liver cells.

We have found that none of the known or supposed products of hepatic activity—glucose, urea or catalase—when injected into the circulating blood, have the effects produced by exciting the nerves of the liver. Furthermore, the faster heart rate which occurs when these nerves are excited in an animal digesting meat is not seen in an animal which is digesting carbohydrate or fat or which has been fed for several days on either of these foodstuffs.

From the evidence in hand we have drawn the conclusion that sympathetic stimulation evokes from the liver not only a discharge of sugar but also a discharge of some elaborated unknown substance which has both cardio-accelerator and pressor effects. Here we are on the edge of advancing knowledge, and I am sorry

that I cannot give you further information about the nature of this new substance.

EVIDENCE FOR SYMPATHETIC CONTROL OF THE THYROID GLAND.

A number of histologists have described non-medullated nerve fibers reaching to the cells of the thyroid gland, and anatomists have found that the fibers distributed to the gland arise in cervical sympathetic ganglia. In 1916, in cooperation with Cattell,[20] I made use of the electrical change accompanying physiological activity to obtain further evidence of nervous control. We connected the thyroid and a neighboring indifferent tissue through a galvanometer, and observed that stimulation of the cervical sympathetic cord called forth an action current after a latent period varying between five and seven seconds—an effect which persisted after the superior and recurrent laryngeal nerves were severed. This did not occur if the main trunk of the vagus was stimulated or if pilocarpine, which is an excitor of vagus endings, was injected. The effect cannot be attributed to shutting off the blood supply by vasoconstriction, for total anemia produced by clamping the carotid arteries for a period equal to that of sympathetic stimulation produced no noteworthy electrical changes in the gland. From these experiments the conclusion was drawn that the nerve fibers distributed to the thyroid cells belong to the sympathetic and not to the cranial division of the autonomic system, and since their effects are not indirect through alterations of the blood supply, they are indeed true secretory nerves.

The electrical evidence was soon confirmed by the experiments of Levy, working in the Harvard Physiological Laboratory.[21] He made use of Oswald's observation that if thyroid substance is introduced into the blood stream, standard doses of adrenalin injected intravenously cause a greater rise of blood pressure than they caused previous to the thyroid dosage. He found that injections of adrenalin, made after stimulation of the cervical sympathetic trunk, had greater pressor effects, amounting in some instances to as much as 200 to 300 per cent.

Since adrenalin mimics the action of sympathetic impulses, it was to be expected that adrenalin itself would stimulate the thyroid. This Cattell and I proved to be true for the electrical change, and Levy confirmed our results by his method. Stimu-

lating doses of adrenalin caused a much increased efficacy of the repeated standard doses (which were extremely small compared with the stimulating dose). If the thyroid glands had previously been removed, Levy noted that neither sympathetic stimulation nor adrenalin injections produced any increase of the response to the standard doses.

The method used by Levy involved destruction of the upper part of the central nervous system. This procedure did not permit tests to be made on the influence of such stimulation as would, in the conscious animal, be accompanied by sensations of pain, nor on the influence of asphyxia. It was desirable, therefore, to have another method which would permit such tests as these to be made. In 1920, P. E. Smith and I made use of the denervated heart as an indicator of thyroid activity.[12] It may seem strange that we employed the same organ to demonstrate the functioning of a number of different endocrine glands. If the response to each is characteristic, however, and readily distinguishable from the others, there is obviously no objection on that score.

With the denervated heart as a test medium we found that gentle massage of the thyroid gland for two or three minutes caused a faster rate ranging between 8 and 30 per cent over the basal rate. The development of the maximal increase was usually slow; it began within five or ten minutes after the massage and required from thirty to sixty minutes to reach the peak. The acceleration passed off in a similarly slow manner. The effect was thus clear-cut and arose from direct mechanical action on the thyroid itself. Massage of another gland, for example, the submaxillary, was without result. The thyroid did not act through the adrenal glands, for the faster heart rate followed thyroid massage even though the adrenal glands had been removed.

Stimulation of the cervical sympathetic trunk, we discovered, induced a similar increase of the rate of the denervated heart, but this did not occur if the thyroid gland had previously been excised on the stimulated side. Furthermore, afferent stimulation applied to a sciatic or brachial nerve, under a degree of anesthesia that permitted sympathetic impulses to be reflexly discharged, had the same effect as direct excitation of the cervical trunk. The only additional element was a prompt primary acceleration of the heart from reflex adrenal discharge—an effect which was continued

by the more slowly developing thyroid influence. Asphyxia, likewise, evoked the same results. If the thyroid apparatus had been excised, however, sensory stimulation and asphyxia induced only the increased rate due to adrenal secretion.

The foregoing lines of evidence—electrical, vascular and cardiac—coincide in pointing to a control of the thyroid through the sympathetic strands in the neck. It is a matter of interest to know if continued stimulation of the thyroid would have characteristic effects. This idea has been tested by connecting the central end of the cut phrenic nerve with the peripheral end of the cut cervical sympathetic trunk. This is a union of motor fibers with pre-ganglionic fibers—a combination which Langley long ago proved capable of functioning. When the phrenic neurons grew out to the previous distribution of the destroyed cervical sympathetic axons, they would discharge into the innervated structures a volley of nerve impulses with every respiration. Thus the outlying neurons affecting the thyroid gland, in case the phrenic elements grow into contact with them, would be continuously excited by normal impulses from the central nervous system. By this procedure we have been able in a certain percentage of cases to produce many of the phenomena of hyperthyroidism. The heart rate, which in the cat is approximately 150 beats per minute, increased to 225 and even to 250 beats per minute. The character of the animals changed from that of quiet, affectionate domestic pets to that of furtive creatures running away from anyone entering the room. There were loose movements of the bowels without evidence of fermentative changes. The most typical alteration, however, was a great increase in metabolism. Removal of the thyroid gland on the operated side in one of the animals restored the metabolic rate, which had been nearly doubled, to a level which was within the normal range of variation.

Attempts to repeat during the early spring the experiments on massage of the thyroid gland and on phrenic stimulation have led to minor or negative effects. This result was at first most surprising and disconcerting. We then found, however, that there was excellent evidence [18] that in domestic animals the thyroid glands have a much lower iodine content during March and April than in the months of the fall and early winter—the time when the most striking results were secured. We are now preparing to

repeat these experiments during the period of maximal iodine percentage in the thyroid (September and October).

THE NATURE AND LOCATION OF THE NERVOUS CONTROL.

Thus far evidence has been adduced that adrenal, hepatic and thyroid secretion are all subject to sympathetic impulses, *i. e.*, to the activity of that part of the nervous system which is roused in great excitement. Two interesting questions now arise. First, is the control of these organs double, in two nerves, as in the case of the submaxillary gland, for example, which is subject to the more or less opposed chorda and sympathetic impulses; or is it a single nerve control like that of the biceps, with inhibitory and excitatory impulses directing the central station? And second, where is the central station for reflex stimulation of these glands?

In experiments performed by Rapport and myself answers to these questions have been found for the adrenal medulla.[34] We have been able to locate the reflex center for adrenal secretion. In securing this evidence we used the denervated heart as an indicator. Stimulation of an afferent nerve, the sciatic or brachial, caused acceleration of the heart, although the cerebrum and corpora quadrigemina had been removed. A transection a few millimeters back of these bodies, however, destroyed the reflex. The center is situated, therefore, in the upper edge of the fourth ventricle.

If under experimental conditions the adrenal glands are removed, the rate of the denervated heart diminishes. This occurs although the arterial pressure remains undisturbed. This slowing can properly be attributed to the absence of the continuous secretion from the adrenal medulla that is going on while the glands are present. It is clear, therefore, that anything checking the flow of adrenin from the glands will result in a slowing of the rate of the denervated heart. Now it is known that stimulation of the central end of the vagus nerve or the depressor can cause a reflex retardation of the heart rate and a reflex fall of blood pressure by vasodilation. These are effects opposed to the effects of circulating adrenin. In a well-ordered mechanism we should expect synergistic action, *i. e.*, that when impulses are sent into the nervous system that would slow the heart and cause vasodilation, they would also check the secretion of adrenin. Using

the fact that absence of the adrenal discharge lowers the rate of the denervated heart, we stimulated the central end of the cut vagus or of the depressor nerve and found that fairly promptly the rate drops—it may be as much as twenty-four beats per minute—and that this occurs even though the corpora quadrigemina and all parts anterior to them have been removed. It fails to occur when the brain stem is severed a few millimeters back of the colliculi, and also after the adrenal glands have been excised. All attempts to secure effects from peripheral vagus stimulation on adrenal discharge were futile. From the foregoing evidence we have inferred, therefore, not only that the reflex center for the adrenal medulla is close behind the corpora quadrigemina in the fourth ventricle, but also that it may be brought into extra activity or sharply checked by the influence of excitatory or inhibitory nerve impulses.

One of the most significant discriminations that has been made by modern neurologists is the distinction between the archaic portion of the central nervous system, which is common to practically all vertebrate forms, and the newer portion, especially the cerebral hemispheres. The evidence presented in the foregoing pages localizes the control of adrenal secretion, and probably the control of hepatic and thyroid activity as well, in a part of the archaic or primitive nervous system. It is important to observe that this region is in close approximation to that which is concerned in emotional expression. Sherrington and Woodworth were able to evoke what they called "pseudaffective reflexes" (baring of teeth, snapping of the jaw, dilation of the pupils, angry or plaintive vocalization) on stimulating an afferent nerve in a cat after complete ablation of the cerebral hemispheres and a portion of the thalami.[15] Goltz likewise noted typical emotional expressions (snarling, snapping, growling) in a dog from which the cerebral hemispheres had been wholly removed.[16] Similarly in anencephalic infants stimuli which to the adult human being are unpleasant, bring forth characteristic emotional reactions, such as drawing down the angles of the mouth and the lower lip, puckering of the mouth, withdrawing the head and whimpering or crying.[17] Furthermore, Head and Holmes, because of their clinical studies, were led to the conclusion that the thalamus in man is concerned with the affective side of sensation.[18]

From the evidence now in hand it appears that the nervous mechanisms for emotional reaction, certainly those for unpleasant experiences, are found not in the neopallium, but ingrained in the archaic portion of the nervous system which is the common possession of all vertebrate forms. Possibly that is the reason why the superficial expressions of emotions are so similar in widely different animals, such as the dog and the cat, and man. The fact that such is the case permits us to use the lower animals in an analysis of conditions accompanying emotional outbreaks and justifies the hope of finding similar conditions and similar analysis in human beings.

Application of the Foregoing Results to Human Beings.

When we ask to what degree the results obtained on lower animals apply to man, we receive only partial and indefinite answers. We know that emotional excitement in man is attended by many of the signs of discharge of sympathetic impulses that are seen in the dog and the cat. In the excited man the heart beats rapidly, the blood pressure rises, the pupils dilate, the processes of digestion cease.[19] These are clear indications of characteristic diffuse innervation of the viscera by sudden special action of the sympathetic division. It is highly probable that the adrenal glands, the liver and the thyroid are as much involved in the complex of emotional response in the human as they are in the subhuman groups. Unfortunately we still lack proper tests for adrenal and thyroid secretion in the natural state of the body, and therefore we cannot obtain direct evidence of the presence or absence of extra activity of these organs. There is, however, some indirect evidence of their action.

Increased sugar in the blood, or the presence of sugar in the urine, after great emotional stress, results from the liberation of sugar from the glycogen store in the liver. Hyperglycemia or glycosuria has now been observed in foot-ball players after a major contest,[19] in students after a hard examination,[20] in aviators after a flight,[21] and in citizens after being subjected to the perils and excitements of a bombardment.[22] Kooy has reported a marked hyperglycemia in mental disorder associated with anxiety.[23] Under circumstances which give rise to an excessive mobilization of sugar in the blood, we find in lower animals evidence of adrenal

and thyroid secretion. The faster metabolic rate often noted when the first test of metabolism is made on a patient may be due to the excitement of the novel experience—an effect which could be accounted for by extra adrenal secretion. That the thyroid may also be affected by strong emotion is indicated by the numerous instances of hyperthyroidism that developed during the war. Maranon has collected a large series of these cases and from them he has concluded that the emotions have an indubitable influence on the pathogenesis of the disease.[24]

I regret that, for the present at least, we must leave in this unsettled state the question of emotional involvement of the endocrine glands in man. Probably before many years have passed we shall have satisfactory tests for the internal secretion, and then shall know better the total expression of an emotional storm in our own bodies. Until then we must rely upon what the lower animals reveal and the fact that emotional responses are primitive and are so common and universal that the superficial changes of face and posture make a sort of sign language between animals of widely different species. Under such circumstances we may reasonably expect a large degree of similarity between emotional effects in man and in the dogs and cats used for experiment.

We have now reviewed the bodily changes accompanying strong emotions. It will be recalled that I suggested that the total emotional experience could be divided into three parts—the subjective feeling, the bodily changes, and the instinctive behavior. Have we any new light to throw on the relations of these three aspects of the experience? Since the instinctive behavior can be voluntarily suppressed without abolition of the subjective feelings and since the mere act of running or the motions of fighting do not induce either fear or anger, it seems to me that we can eliminate that element as a factor in producing the conscious state. Earlier I pointed out that adrenalin introduced into the body is capable of evoking practically all the visceral changes that are characteristic of a profound emotional disturbance. Recently testimony regarding their feelings has been obtained from persons who have received effective injections of adrenalin. Maranon has described vividly the physiological effects of these injections. The face turns pale, tremor begins as a fine oscillation of the fingers and

may develop into a violent trembling of all parts of the body, the pulse rate increases, the mouth becomes dry, the pupils are dilated, the eyes become brilliant, the arterial pressure is raised, and occasionally the forehead is moistened by a cold sweat.[25]

While his subjects were in this state Maranon asked them about the attendant feelings, and had these answers. "I feel a general nervousness, a trembling of my body, a sense of oppression in my chest—I feel my heart-beats everywhere." And one subject added, "I feel as though I were experiencing a deep emotion, but I am not at all." Some students at the Harvard Medical School, who had engaged in athletic matches, testified after receiving an injection of adrenalin that they felt just as they had felt before starting a race—"all worked up and on edge."

The foregoing statements do not point to any *specific* effect of the visceral changes on the conscious emotional experience. Elsewhere I have argued that the similarity of these changes in such widely different states as rage and fear, for example, does not permit them to be used as the source of the feelings that are experienced. The evidence obtained by adrenalin injections seems to me to confirm that view. There is nothing definite or *directive* that results from the bodily changes.

What then is left to account for the mystery and surprise of an emotional outburst, the peculiar features that distinguish one emotion from another, and the typical modes of expression of the various emotional states? May we not find these differential characters in the nervous *pattern* that lies ingrained in the archaic part of the neurone system? We may conceive these patterns as quite different for joy and for sorrow, for anger and for terror. And when the nerve impulses flash through these ready, but unworn pathways, the effects may be quite as strange and startling and as rich in feeling tone as if the impulses arose from the altered viscera or the tensions of facial and skeletal muscles.

If the view I have hinted at is correct we might have all three parts of the emotional experience dissociated. The subjective state and the bodily changes may not be followed by the instinctive act, as we have seen. The bodily changes may be induced by appropriate stimulation, without, however, evoking a specific emotional attitude. And it is quite conceivable that the neurone pattern for any affective state may become fixed and habitual, with

typical attitudes of face and trunk but without feeling and without visceral disturbance. The degree to which this dissociation may go I must leave to you who are much more competent than I to express expert opinion on it. The physiologist is pleased to think that normally, under natural conditions, the dissociation does not occur. He finds a fascinating field for research in these elementary and simple reactions, emotional and instinctive, that occur in an ancient portion of the nervous organization of the body—the basal ganglia, the medulla and the sympathetic system, and that bring into operation organs which are fundamentally important for the organism—the ductless glands. Fortunately this is an interest that lies in the twilight zone where physiology and psychology, pathology and psychiatry all meet. And doubtless we shall have many further occasions to collect and compare our observations.

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HABIT CLINICS FOR CHILDREN OF THE PRE-SCHOOL AGE.*

By DOUGLAS A. THOM, M. D.,
Chief of the Out-Patient Department, Boston Psychopathic Hospital.

At the request of the Baby Hygiene Association of Boston, I was delegated early in November, 1921, to make a survey of one of their health clinics to determine whether a psychiatrist might have anything of value to contribute to their program of preventive medicine as it related to the care of children during the first five or six years of life.

I recall my doubts and misgivings when I was informed that the problem of studying the mental life of these immature youngsters would be complicated by having to deal with parents whose interest in abstract problems might be at low ebb, to say nothing of the barriers that might arise from language difficulties. I soon learned, however, that the problems were not abstract and that the language difficulties had been much exaggerated.

A visit to one of these clinics not only demonstrated the need of some one who was willing to study the child and his mental life, but stimulated a keen desire to begin at once. Consequently there was established what we please to term a habit clinic, the first of its kind to be held in Boston.

The assets of the new clinic were very modest indeed, including a psychiatrist one afternoon a week, a pad of paper and pencil, a chair and table in the nursery, and the necessary equipment for making a complete physical and neurological examination.

The function of the habit clinic is to deal with those children who are developing during the pre-school age—that is, between the ages of two and five years—undesirable methods of meeting the daily problems with which they are confronted, to further the formation of habits that will tend toward the proper development of the child and its best interest, to determine in so far as possible

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the basis of undesirable habits and unhealthy methods of reaction, and to institute proper training and treatment to overcome such habits. In brief, the habit clinic has for its objective the healthy development of the mental aspect of the child's life, beginning at a time when methods of prevention rather than of cure can be utilized.

We do not feel it necessary to seek justification for the organization of these clinics in some vague, ill-defined hope that they may tend toward the prevention of mental disease; we feel that their existence is justified by the immediate results obtained. A neurotic child or one struggling with some undesirable habit problem, who is finding it difficult to make early adaptations and to face every-day problems in a normal, healthy manner, may very easily become the dominant member of the household and not infrequently be the direct or indirect cause of much family strife. All too frequently such a child becomes the economic hazard or the social menace that eventually leads to the disintegration of the home. Such a child not only demands, but usually gets, a disproportionate share of the parents' time, to the neglect of the other children and their consequent jealousy, envy, and resentment. Although no claim is made at this time that there is any relation between these undesirable habits in childhood and the mental breakdowns of later life, it is not difficult to see that these infantile reactions closely resemble the psychoneurotic manifestations in adult life and that a fundamental lack of inhibitions may be the dominating characteristic in a delinquent career.

We all appreciate that the success or failure of the individual to adapt himself in a manner satisfactory to those with whom he is associated may depend upon numerous and varied factors, all very intricate and involved and frequently closely interwoven with one another—bad bodily health dependent, perhaps, upon some simple problem of nutrition or an improper balance between the glands of internal secretion, a nervous system incapable of functioning in a normal manner, and the less well-defined inherent defects that prevent the normal development of the instinctive and emotional life of the individual.

Although one or more of the foregoing factors may be present in a great majority of the cases that are "failing to make the grade," we cannot ignore the fact that often the stumbling block is

not within the individual himself, but in the environment in which he is reared—that there is a group of cases, however large or small we cannot say at this time, who become the victims of their environment rather than of their heredity, their economic or social failure having its origin in the mental conflicts of childhood and in the development of unhealthy methods of dealing with mental problems. It is obvious, therefore, that it will be greatly to the advantage of the particular individual concerned and of those with whom he is to come in contact in future years if such conflicts can be unearthed and such unhealthy methods of reaction corrected at the age of five instead of at thirty. Whatever view one may hold regarding the fundamentals of character and personality, we are, I think, all agreed that there are certain instincts, "innate tendencies," natural inclinations or propensities—call them what you will—which are lying dormant in the individual from birth ready to be called into service, usually at the necessary time and with the necessary force to meet the best needs of the individual. The stimuli that actuate these forces may come either from within the individual or from the environment, and it is for the purpose of attempting to guide, to inhibit, or to stimulate these instinctive forces which may be underdeveloped or overdeveloped or imperfectly developed, that we study the mental life of the child, utilizing behavior as the medium of interpretation.

It is not my purpose to enter into the psychology of habit formation, but simply to mention in passing a few of the fundamentals necessary for the development of every human being, that are more in evidence during childhood than at any other period of life. Those that strike me as being of particular importance because of their utility are plasticity, suggestibility, imitativeness, and a love of approbation. These four characteristics, so dominant during the first few years of life, are invaluable assets in our efforts to model and remodel personality.

The home represents the workshop in which these personalities are being developed, and the mental atmosphere of the home can be very easily contaminated. The ever-changing moods of the parents, colored by their indifference, their quarrels, depressions, and resentments, and shown by their manner of speech and action, are decidedly unhealthy; so, too, are the timidity of a mother, the arrogance of a father, the self-consciousness of a younger sister,

and the egotism of an older brother. Under such conditions we find a mental atmosphere as dangerous to the child as if it were contaminated by scarlet fever, diphtheria, or typhoid. On the other hand, cheerfulness, affection, kindly consideration, cleanliness, a manner and speech that are not forbidding, but show interest in the questions of the child, frankness and honesty in answering questions with the idea of developing freedom in speech and action not inhibited by fear of punishment or silent contempt—all these things play a part in the development of the personality of the child that cannot be overestimated. The environment is found to be mirrored in the character of the child, regardless of what its heredity may be.

I have already stated that the problems were not as abstract as I had anticipated. Take, for example, the case of two youngsters in the same family, one just over five, the other over six years of age. The younger, Gertrude, was brought to the clinic on account of persistent bed wetting and walking in her sleep. She would wake up frightened and cry out, disturbing the entire household. The older, Helen, also a persistent bed wetter, for the past three weeks had been vomiting every morning and occasionally during the day, and was very untidy in her dress and general habits. Both children were a great problem to the mother. She stated that it seemed as if she did nothing but wash sheets all day long, and since Helen had begun vomiting, her daily routine had become even more difficult. The conditions in the home were described by a psychiatric social worker as follows: The family lived in three miserable rooms with low ceilings, small windows, and floors in bad condition, showing that apparently no attempt had been made to do any cleaning for several days. Piles of soiled clothing were lying around, and wood and coal were scattered about the stove. In one of the rooms there was a small open toilet for the children to which they went frequently and which the woman emptied at infrequent intervals. A towel and wash cloth that hung by the sink and that were used to wash the baby's face, were indescribably dirty. The air in the room was very bad.

The mother, a woman of no particular intelligence who was able to speak only rather broken English, was five months pregnant. She stated that she often wondered what she had to live for. She seemed to be afraid of her children, but on the other

hand was very fearful that some harm might come to them. She walked to school with them twice every day because she was afraid the bigger children would knock them down. There were four children, the two of whom I have been speaking, Helen and Gertrude, being the oldest. It was not difficult to determine that Helen's vomiting was purely a matter of imitation. The mother had been vomiting herself (because of her pregnancy) for the past months, often in the presence of the child. The bed wetting of both children had been tolerated and no attempt had been made to establish a routine that would tend to break up this habit. Within two weeks the vomiting and the bed wetting of both children were stopped by very simple, common-sense measures. I need not say that the mother was much gratified at getting results by following our simple instructions. An effort is now being made to help her with the family budget—as the income of the father is sufficient to provide much more comfort than the family are getting—and to teach her some of the principles of cleanliness and household efficiency. In this case our success with the children was the initial wedge in getting into the household and doing something for the entire family.

Another little girl, aged three and one-half years, was brought to the clinic because of terrifying dreams, an intense fear of dogs, and extreme shyness. It was only after the third visit to the clinic that the mother herself threw much light on the origin of the child's fear of dogs. She stated that when she was about eighteen years of age she herself had had a rather terrifying experience in being chased by a dog and this fear had persisted for a long time. Remembering her own fear of dogs, she had felt that it would not be a bad plan to instill this same fear in her child, and for months past she had frightened the little girl, when she was disobedient, by threatening to go and get the dog, and when out on the street with the child she always pretended to be afraid when dogs were present, although she had actually overcome her own fear. By instructing the mother and giving the child a proper attitude toward animals, this fear was soon banished, and the terrifying dreams ceased without any further treatment. The child is still very shy, but is making contacts with other children, and the prognosis seems good.

Another little girl, Frances, aged two, was brought to the clinic by her mother because she was making vicious attacks upon her little sister Ruth, aged four. The day before her visit to the clinic, she had bitten her sister on the abdomen and scratched her face rather severely. Investigation of this particular situation revealed the fact that the father had noticed, when Frances was but eighteen months old, that she showed rather unusual and amusing reactions whenever he petted her older sister. It soon became his pastime, when he came home from work, to make a great deal of Ruth in order to arouse antagonism in Frances. He did not realize the danger of this particular form of amusement. Here we have a good example of jealousy being developed in pure culture, an emotional reaction that we are all quite aware not infrequently leads to serious difficulties.

Another youngster, aged five and one-half years, refused food unless fed by her aunt. When left alone with the food, she hid it and then told fanciful tales of what had happened to it. A careful examination at the Children's Hospital in order to determine whether the refusal of food had any organic basis gave negative results, and measures were then instituted that ended in the child's being willing to feed herself, thus relieving the family of an unusually wearisome task.

Paul, aged four, an alert lad of normal intelligence, every now and then caused much concern in the family by losing his voice. The reason for the trouble was quite obscure until Mrs. N. reported at the out-patient clinic at the Psychopathic Hospital with the identical complaint. Investigation revealed the fact that Paul lived in the same house with Mrs. N. and that he spent as much time in her home as he did in his own. This symptom, like that of persistent vomiting just described, was one that had its basis in the imitative tendency so well marked in children.

The following case, although nine years of age and not in the pre-school group, is mentioned in closing to illustrate the development of symptoms that begin in very early life.

The little girl in question was brought to the clinic because of sex delinquencies and the lack of a sense of shame. Her father is said to be a very sane, sensible sort of man who is making every effort to care for his family. The mother was an epileptic with hypersexual tendencies, who died at the Psychopathic Hospital

about four years ago from a toxic psychosis. The father married again and although the stepmother is trying hard to cope with the present family situation, she has not been particularly successful on account of the older stepdaughters. At the present time she is separated from her husband because of the conduct of the patient and the lack of support she got from other members of the family in her efforts to make things go right. For the past three years, or since the age of six, the patient has been known to have been carrying on sex relations with various boys in the vicinity; and on several occasions she has been found in the cellar of an unoccupied house near her home absolutely nude, with three or four boys about her own age. She tells her father in detail what has happened and shows no sense of shame whatever in speaking of the active part that she has played in these episodes. Her father states that she has shown abnormal interest in sexual things for the past three years at least. After coming home from the moving pictures she seems to remember nothing but the sexual aspect of the picture, frequently fabricating and interweaving sensual situations that have no foundation in fact.

In the psychological examination this little girl graded a year beyond her mental age. In the examining room she answered all questions quite openly and frankly. She evidenced an extremely precocious interest and a very intimate knowledge of sex affairs which could have been gained only by personal experience. She made no effort to minimize her part in these unfortunate episodes, but did express quite voluntarily a desire to overcome her hypersexual tendencies. She realized that her delinquencies were breaking up the home and showed fondness for her stepmother and appreciation of the fact that she was trying to be of help. This patient has been seen on four different occasions, and we have every reason to believe that much will be accomplished towards solving her difficulties through reëducation and a change of environment.

I feel that it is extremely important that such a clinic as I have described be very closely associated with some general health movement, first because of the advantage thus gained being able to refer the patient from one specialist to another as occasion demands, and second because of the opportunity afforded to

present psychiatry in a very practical way to the medical profession at large.

I have not lost sight of the fact that many of the foregoing conditions described as "undesirable habits" might well be considered self-eliminating, yet this in no way justifies us in ignoring them. It is important to appreciate the fact that the child reacts on a much lower level than the adult and that there is a marked difference between the purely instinctive reactions of children of the pre-school age and the more elaborate personality reactions in adult life. I believe that the reactions of childhood can be interpreted more accurately and with less difficulty than those of adult life.

The importance of establishing habit clinics in the communities where these children live and in the nurseries with which they are familiar is well worthy of consideration. Such location serves two distinct purposes; first, it renders the clinic available to many children whose parents would find it quite impossible to seek advice from the hospital; and, second, it permits us to observe the child under more normal conditions than we would find in the ordinary out-patient clinic.

A great deal can be expected from developing psychiatric social workers in this field. Undoubtedly we shall find that, when properly trained, they are capable of assuming far greater responsibilities than we have heretofore been inclined to put upon them.

Up to the present time we have done no more than establish the fact that there are many intricate and involved problems relating to children of the pre-school age in which the psychiatrist and psychologist and psychiatric social worker can render most valuable service. The task at hand is to develop, in so far as possible, definite means and methods of dealing with these problems, getting away from vague generalities as soon as the analysis of our material justifies.

DISCUSSION.

DR. C. MACFIE CAMPBELL.—Mr. President, this work of Dr. Thom's is very fascinating in itself and has very wide ramifications. The physicians who are working in large hospitals have frequently to deal with end conditions, with a large number of very serious cases, the outlook in which is often rather depressing. The general impression which the public gets with regard to mental disorders is somewhat fatalistic and pessimistic. And we know that

psychiatry is not a branch of medicine that attracts most physicians, and that is because of their idea of what it is. It is, so far as they are concerned, determined by these accumulations of the most advanced types of mental disorders. The work Dr. Thom is doing is, in my judgment, work of the very greatest importance. It is psychiatric work which encourages an optimistic outlook; we focus upon disease too much and upon health too little. We think too much of disease with its final outcome. The Kraepelinians have got us into using the final outcome as the important point. Dr. Thom has been very modest in referring to the constructive attitude of this work. It is well not to claim too much, but we are able to see what Dr. Thom is able to contribute to the individual case, to the parents, to the domestic situation, the social situation and the economic situation; without the help of a trained psychiatrist these problems are dealt with in a most perplexed way by non-psychiatric physicians and nurses and by social agencies equally at sea. I think we are all struck in the early history of patients with the unnecessary strains imposed on childhood; periods of unnecessary distress and disturbance which might have been so easily prevented but for which apparently there was no mode of treatment, no resources available. It seems to me that we are entitled to look forward to organizing sources of treatment for those children in the same way that we do in adult clinics, where we try to organize treatment for the minor and incipient disorders. The knowledge of the psychology of childhood is very meager and if we want to find the details where are we to look? Not to pedagogy, not to the laboratory; there the worker lays too little stress on the instinctive life of the child. We have to go to the psychopathologists who have taken up very intimately these factors and we are thrown back very largely on the detail of the psycho-analytic schools which have traced the development of psychological symptoms, but under the difficulty of psycho-analytical interpretations. We are dealing with patients in the twenties or thirties who are trying to reconstruct the early history and we know how in the early stages of his work Freud came to realize that the traumata were frequently not actual experiences but were really the phantasies of the adult patient. Therefore, we have to construct the early psychology of childhood on some such observations as Dr. Thom is bringing before us. These observations may be of great medical use at a time when we can study the child and the environment and modify the factors which are of importance. There is one point which I would like to emphasize. Dr. Thom has shown the great benefit of his work, the almost dramatic results that one gets in cases of this kind. When we consider the relief to the patient and the importance of the work, we desire to spread these clinics. Such a clinic should not be started without realizing that in order to do work of this kind the physician must have considerable experience and mature judgment. Dr. Thom comes to this work after a very prolonged experience and with a knowledge gleaned from a study of the whole evolution of mental disorders. We must, therefore, see to it, as far as we can, that those who want to start similar organizations shall realize that it is essential to have only such clinics where there

is a personnel adequately trained; and that perhaps there would be a great deal of danger if we were to start such clinics with individuals who had had a very brief training in this sort of work. When our medical students come to see that this is psychiatry, when the young student who is interested in other things such as pediatrics, comes to see that work with children includes not only the focal infections, but also that moral and mental problems are to be studied, they will begin to take these up as natural objects of study of fascinating interest. We shall find that the medical student will look upon psychiatry with a new interest, and that the nurses in the public health centers will look on psychiatry not as a branch of medicine dealing, as it were, with end products, but as a branch that is dealing with the beginning of things, and one that brings practical help to any organization which is dealing with the health of the population.

We are all very much indebted to Dr. Thom for putting before us such a fine presentation of so complicated a problem.

Dr. Abbot.—We all must agree that Dr. Thom's paper is a very valuable contribution to the public health movement. We sometimes forget that psychological reactions are just as inevitable as physiological or chemical ones. Dr. Weidman's emphasis on the environmental factors and Dr. Thom's emphasis on their elemental character, as among those causing irresponsibility in children, is an important thing to bear in mind. Both papers show that psychology, with its reactions of different kinds, is necessary and must be studied. In industry, for example, when the boss gives orders in offensive language, he is apt to arouse a reaction of resentment; where, on the other hand, the workman receives a proper stimulus, there is more apt to be a reaction of cooperation. These studies of Dr. Thom indicate how we can make the stimuli helpful to the individual and how we can correct many of those which are harmful. His excellent contribution suggests measures to be taken and to be maintained in insuring the mental health of the younger generation.

Dr. Gregg.—Mr. President, I think the importance of the ideas in Dr. Thom's paper cannot well be over-emphasized. They are important both for the individual and for the community. Such studies should, and I believe will, give us further knowledge regarding the etiology of mental disease by providing greater understanding of the soil in which these diseases develop. If we can find babies without teeth with dementia præcox, what is the value of yesterday's discussion about curing such cases by extracting infected teeth?

Dr. Baker.—Mr. Chairman, about twenty years ago when I became a member of this Association, there was not much to be found on the pages of our program about the child, but since that time there has been rapid development in the care and education of the feeble-minded as a class, and today the section of the program of the Psychiatric Association which

deals with the child is not very unlike a section of the program of the American Association for the Study of the Feeble-minded. It is very essential that the Psychiatric Association consider the mental diseases of childhood, for our public school educators are now using the mental tests and measures and our public schools are so thoroughly graded that the mental contrasts of childhood are more marked than they formerly were, and if the Psychiatrist and Psychologist of The American Psychiatric Association do not consider well the phobias, neuroses, and psychoses of childhood in the near future, they will be pointed out to them by the Pedagog. We must give more attention to the child, and this able paper tells where mental hygiene begins. The undeveloped child mind cannot elaborate as interesting a chain of delusions or as clearly define his hallucinations as can an intelligent adult. There is no doubt but that the removal of vicious environmental influences and the correction of the phobias of the child would assist greatly in a normal mental growth. Our knowledge of mental diseases generally might be increased and their treatment improved by focusing our study of mental diseases on their beginnings in early childhood.

DR. KEILTY.—I cannot help but call to the attention of this society, especially in connection with Dr. Thom's and Dr. Hyde's papers, some of the plans of the International Rotary Clubs. Their largest work at this time is known as boy's work. Each individual club has a committee known as the Boy's Work Committee. It seems to me that a great deal more would be accomplished if they could cooperate with some of the work that we have learned of this morning. They would be in a better position to put it over to greater advantage. The difficulty is to learn how to get to the boy, and when this is done, just what to do with him. I am sure I have learned a lot to bring home to our boys, and it seems to me, as brought out this morning, the important thing is to reach him early in the home.

A very concrete example occurred in front of the Chateau the other day; one need not necessarily go into the lowly home. A small child ran down a little mound, and in running down he tripped over and scratched his head on the pavement, and of course began to cry. The mother came along and pulled him up sharply and said, "I told you not to do that; it serves you right." There probably was need for correction, but this child was hurt in the act of play and needed sympathy. The future of our Americanism rests upon the child of to-day and the influence of the home right now is the greatest single factor in the building of that future.

DR. THOM.—Mr. President, one of the most important statements that I have heard at these meetings was made in the presidential address where Dr. Barrett stated that the conditions and causes are more easily discussed than other aspects of a case. This morning I have presented only conditions, but I am convinced that we can develop proper methods by intensive study, not only understanding the causes but the treatment of these conditions and that such a contribution will be of immense value in understanding the

psychology of childhood. I think it is important to point out the importance of the psychiatric social worker in this particular field. I am sure that with proper training she will be able to assume much more responsibility than she has been given heretofore. Much of the important information relative to the study of children must be obtained from the home and the social worker must be constantly disseminating the psychiatrist's point of view in the home. I feel that it will take a three-year period at least to develop a technique worthy of presentation in the handling of these problem cases.

RECOGNITION OF PRE-PSYCHOTIC CHILDREN BY GROUP MENTAL TESTS.*

By GEORGE E. HYDE, M. D., Provo, Utah.

Among the patients in the Utah State Mental Hospital we have one hundred who are feeble-minded. They are segregated in a large two-story cottage, which has been filled to capacity for several years.

Applications for admission to this department for the feeble-minded have been so numerous and urgent that we are continually distressed by being compelled to decline admission to these unfortunates for want of room and lack of facilities.

We realize the urgency of these applications as the home cannot be burdened with a greater demoralizing factor than to have the care of a helpless and repulsive idiot or imbecile.

Several attempts have been made to impress our legislature with the necessity of alleviating this condition, but the arguments and figures usually presented by enthusiasts, well meaning social workers, have been so extravagant and unreliable that they have been disregarded and nothing has been accomplished.

Believing the legislature would make adequate provision if reliable information was presented, the State Board of Insanity authorized me to make as complete a survey of the state as possible in order that a reasonably firm foundation of facts might be presented to the legislature for their action.

We secured the co-operation of city and county officials and of all the social welfare organizations in the state.

From these sources were obtained the names of those recognizable by the laity as feeble-minded; being the idiots, imbeciles and low grade morons.

Realizing the school authorities have control of all children between the ages of six and eighteen and that they make a yearly

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census of the same, it was obvious this would be the most fruitful field to explore.

The examination of school children necessitated the use of psychometric tests; we therefore solicited the aid of Prof. Geo. S. Snoddy, head of the Department of Psychology in the University of Utah, and he entered the work with enthusiasm and untiring energy.

All the school authorities of the state approved the movement and gave whole-hearted support.

It was physically impossible to give individual psychometric tests to the great number of children necessary to examine in order to arrive at the probable amount of mental deficiency in the schools. We therefore carefully considered various group tests and decided to use the army "Beta" tests with such modifications as were necessary for the first and second grade children.

The norms for these tests were standardized by giving them to 200 children of the university training school, the standing of each child having previously been ascertained by Binet-Simon and other tests.

Twenty advanced students, majoring in psychology, were adequately trained in the technique of the giving of these group tests and the work was commenced in the public schools of Ogden and continued throughout the state until over 15,000 children had been examined. Children of all nationalities, those from the silver, copper and coal mining districts as well as those of the cities and the agricultural counties were examined, so that the survey was representative of all sections of the state.

We tested only to the 5th grade, as a 70% moron in this grade would be fifteen years old chronologically and not suitable to associate with children five years younger, therefore they had been weeded out and not permitted to proceed into the higher grades.

The results of the census showed that 50% of the school children were of average intelligence, 20% above and 20% below average, 5% were found to be supernormal and 5% subnormal.

These findings, especially if examinations are continued, will be of great value from a vocational standpoint.

After the results had been tabulated, the names of the low 5% were submitted with appropriate questionnaire to the school teachers with the result that 43% of this failing group could be accounted

for because of physical defects and language difficulties. Thirty-seven per cent because of serious retardation and feeble-mindedness and 20% because of nervousness and excitability.

It was also found that the number of children retarded by deficiency became gradually less from the lower to the higher grades but that the nervous and excitable children were equally distributed through the grades, and we are justified in believing that if 20% of the failing 5% group or 1% of the children examined were nervous, restless and excitable and therefore unstable that 1% of the entire school population are so affected. It is this 1% of the entire school population in which we have particular interest in this discussion.

Some of the teachers complained that some pupils who failed in the test did passable work in their classes, but in each case cited the teacher acknowledged it to be that of a nervous child. They did good school work if allowed more time than the average pupil required.

The tests showed the nervous children were of normal intelligence but of slow adaptability.

The children classed as nervous failed in those tests which were not demonstrated with charts and where only vocal instruction was given by the examiner.

The span of attention received no stimulus by visual association and as the vocal instructions became more lengthy and more complex the limit of the span or length of attention became exceeded.

The first and second grade children failed in numbers one, two and three of the "Beta" #VIII test where they were instructed to put X in certain squares and O in others.

They also failed in the dot pointing test.

The advanced nervous pupils failed in the "Beta" IV modified. This also was an instruction test.

They also failed in the number checking test because they could not give the necessary length of attention.

As the instructions became longer and more complex they could not be held in the attention of the nervous child sufficiently long for the problem to be completed, therefore, the child became confused and failed in the test.

These same children can do the usual school work with the aid and repeated stimulation and prompting of the teacher although

they require a longer time to make the adaptation, whereas they failed in the tests because there was no stimulation by repetition and the time element was essential.

These tests called for an increased span or length of attention and quick adaptability to a new situation. The nervous child has a short span of attention and a long reactive period is required to restore the metabolic equilibrium, during which period possibly synaptical connection does not occur and we have slower adaptation as a result.

The nervous child can be sought out by appropriate tests requiring gradually lengthened spans of attention with standardized norms for the different age groups.

Our experience in this survey has shown us the advantages of group tests in the schools. By these examinations the morons can be recognized before the usual age of delinquency and they can be prevented from becoming anti-social by proper training according to their capabilities.

These examinations are also of value as a guide to the vocational ability of children. Those children with the lower levels of intelligence would be suitable in adult life only for common labor; the average would find their places in the trades and the supernormal would have the capacity for education for the professions.

Students of mental deficiency are often discouraged by the limitations to improvement of the feeble-minded, but in preventing nervous children from becoming psychotic adults we have no such limitations, as they have greater potentialities and this opportunity opens up one of the greatest fields in preventive medicine.

The impressive fact forced upon our attention by the discovery of this 1% of nervous children was that profitable psychiatric social service work could be performed by following up the individual cases into their home life and all other environment.

Whilst neuropathic parentage may be the underlying cause in the majority of cases, the immediate and exciting causes can often times be prevented and the evil effects of faulty heritage be nullified to a great degree.

Because a child may have a neuropathic ancestry is no reason that it be given up as lost with the idea that no matter what is done it is vitiated by the burden of its inheritance. Suitable training and

environment will guide modes of living and habits of thought which will enable it to live the useful and profitable life of a good citizen.

But, first, these children must be discovered and the most favorable time is during early school life while they are under the jurisdiction of the school authorities.

After being recognized, the work should be followed up by trained, tactful, psychiatric social workers.

Through the carelessness and indifference of parents, many of them neuropathic, a large number of children are not given proper training and attention during the pre-school period and enter school with physical handicaps and abnormal mental characteristics.

Experience has taught that the child should first be examined for physical disabilities which may be causal factors in producing many of the nervous symptoms. Particular attention should be given to malnutrition, infection from decayed teeth, septic tonsils and respiratory obstruction from adenoids, so that a nutritious, non-toxic and properly oxygenated blood supply can be furnished the nervous system in all its ramifications.

The home environment should be studied. Many times teaching of the parents will be required. Neurotic parents bring neurotic children into the world, train and educate them improperly, thereby augmenting the neuropathic inheritance and the children develop nervous and abnormal mental characteristics. Social workers may be brought face to face with distressing conditions that must be changed in order that the child may have a fair chance for normal development. Many homes are sources of constant irritation, but the tactful, efficient social worker can give such aid and advice as may remove considerable of the causes of faulty home training and environment.

The greatest mistakes in child training are made in the home, and herein lies the greatest opportunity for psychiatric social service. A careful study of the companionship and neighborhood environments of the child will also amply repay for all the time and attention afforded them.

It is certainly a duty to give these nervous children the fullest opportunity for mental stability and development so that later they may find comfort and contentment in a well regulated normal adult life, instead of being condemned to the evils of maladjustment with its train of poverty, crime and insanity.

Conclusion.

1. That our survey showed 1% of our school population to be nervous and excitable.

2. The nervous child has a short span of attention and a long reactive period is required to restore the metabolic equilibrium. It may be that synaptical connection does not occur, causing slower adaptation.

3. Suitable group tests requiring graduated longer spans of attention can enable us to recognize school children who are nervous and unstable.

4. By group testing, morons can be recognized before the usual age of delinquency and these should be registered, so that by proper supervision anti-social tendencies may be prevented.

5. Psychiatric social workers can follow the individual nervous children into their homes and all other environment, and their work can be of the greatest value in preventing the nervous and unstable child from becoming the psychotic adult.

COSTS OF A SOCIAL SERVICE DEPARTMENT OF A STATE HOSPITAL *VS.* ECONOMIES EFFECTED THEREBY.*

By AARON J. ROSANOFF, M. D.,
Clinical Director, Kings Park State Hospital, Kings Park, N. Y.

The Kings Park State Hospital has over 5300 patients. Its annual admission rate usually varies between 1000 and 1200, most of the patients coming from Brooklyn. It maintains a social service department which, I believe, is both relatively and absolutely the largest for any institution of its kind in this country and probably elsewhere. It is, as I shall show, a rather expensive department to maintain. But I shall also show that through its operation a saving has been effected greatly exceeding the costs involved.

The view is not advanced here that the economic criterion is to be accepted, to the exclusion of others, in the evaluation of the work of any department of a state hospital. *To re-establish patients in an approximately normal extra-mural existence* is the end toward which the work of every department is directed. Any department which can be shown to be contributing materially toward that end may be said to justify its existence regardless of its costs, if the latter but remain within reasonable limits.

Nevertheless, it need hardly be urged that the economic point of view is not to be ignored. All else being equal, the least expensive way of accomplishing our purposes will be the preferred way.

When it can be shown that a given department not only contributes materially toward re-establishing patients in an approximately normal extra-mural existence but also secures a saving in costs, it is thereby also shown that the hospital could not afford, either from a professional or an economic point of view, to conduct its operations without such a department.

The value of the work of a social service department from a professional point of view will not be discussed here, as it has been

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dealt with elsewhere.[1] The object of this communication is to furnish a statement of this hospital's experience with regard to the costs of maintaining such a department and the economies effected thereby.

The Kings Park State Hospital was the first institution of its kind to employ a field worker. This was in 1910; and the first purpose was to supplement family histories obtained from patients' visitors at the hospital with data to be secured through field investigation. In the course of time the functions of the field worker became more and more those of social investigation and social service.

During the past two years a special effort was made to increase the number of patients on parole, and this necessitated the organization of a large social service department. At the time of this writing (March, 1922) that department employs the following personnel: one senior assistant physician, six female social workers, one male attendant detailed as a social worker, two stenographers, and one transportation agent.

Our present purpose will be best served by making a comparison of pertinent costs and savings for the fiscal year ending June 30, 1919, with those for the fiscal year ending June 30, 1921. The figures for the comparison are given in the following table:

	Fiscal year ending June 30,	
	1919	1921
Salaries and wages.....	$900.00	$5,646.64
Maintenance of personnel.....	360.00	1,824.00
Traveling expenses	429.55	1,787.75
Transportation of patients.....	2,806.83	5,152.53
Totals	$4,496.38	$14,410.92

[1] Mary C. Jarrett. *Applications of Sociology in Psychiatry.* In Manual of Psychiatry, by A. J. Rosanoff, fifth edition, New York, 1920. A. J. Rosanoff and T. S. Cusack. *Parole System and Its Relation to Occupational Therapy.* Amer. Journ. of Insanity, Oct., 1920. W. C. Garvin. *How the Number of Parole Patients were Increased at the Kings Park State Hospital.* N. Y. State Hospital Quarterly, Nov., 1920. A. J. Rosanoff. *The Work of a Social Service Department of a State Hospital.* The Modern Hospital, April, 1922.

Part of the increase in the items of salaries, wages, and maintenance of personnel, shown in the above table, is due not to taking on additional officers or employees, but to re-assignments in the hospital. Also part of the increase in the item of transportation of patients is due not to added transportation of paroled patients to and from the hospital, but to an increase by nearly one hundred in the admissions of the last fiscal year. As it would be difficult, if not impossible, to isolate increases of expenditures attributable to new social service activities from increases in the above items attributable to expansion of other work of the hospital, I have charged all increases to the cost of the social service department.

Turning now to the economies effected, these were mainly in the form of savings of maintenance of patients released on parole. The daily average number of patients on parole during the fiscal year ending June 30, 1919, was 304; during that ending June 30, 1921, it was 669—an increase of 365.

The per capita cost of maintenance of patients at the hospital during the fiscal year ending June 30, 1921, was $379.53. Multiplying this by the number representing the increase of the daily average number of patients on parole, we obtain the product of $138,528.45. Subtracting from this the sum of $9,914.54, representing the increased costs of the social service department, as shown in the table, we find the net saving, accomplished with the aid of that department during the year in question, to be $128,613.91.

This does not represent the limit of possible achievement of such a department. Further noteworthy progress has been made since the close of the last fiscal year in spite of the prevailing hard times and unemployment, but this cannot readily be shown until the figures for the current fiscal year, which is to end June 30, 1922, become available. What can be done under more favorable condition, *i. e.*, in times of industrial prosperity and when the organization and technic of the social department have become perfected from experience, remains for the future to show.

THE SIMPLE REACTION IN PSYCHOSIS.

From the Psychological Laboratory of McLean Hospital.

By F. L. WELLS, Ph. D., *in charge*, C. M. KELLEY, M. D., *Associate*.*

1. There is a fair number of experiments in simple reaction with mental disease, though most of these date from earlier years of laboratory psychology, when the experiment occupied a larger share of the horizon than now. Franz [1] mentions among others, early work of Walitzky, von Tschisch, Buccola, and Janet. Some of this early work is modified by the slight account of cases and observational methods available, together with changes in psychiatric conceptions since the work was done.

2. It is with such for present purposes slight detail that Richet [2] describes reaction time measurements made with idiots, imbeciles, dements, depressions and excitements, and with different types of stimulation. For auditory stimulus the times decrease in the above order, from 629 sigma in idiots to 156 in the excitements. Strong, medium and weak electrical stimuli with idiots gave times of 729, 430 and 373 sigma, respectively. The anomalous result is obtained in the last three clinical groups that reaction to touch is very much longer than that to sound. There are quoted observations by Féré, of very long times in epileptics, and by Binet on the slow and variable reaction of a hysterically hemianæsthetic hand as compared to that on the normal side.

3. Another early group of observations is by Marie and Vaschide [3] with aphasic cases. Twenty observations were recorded with each case. The mean rates were 155, 192, 279 and 378 sigma, the first and second subjects having notably small mean variations, 14 and 12 sigma. Assuming the stimulus (sound) to have been of ordinary loudness, the shortest time is about normal. There is negative relationship with choice reaction averages, these latter

* As of October 1, 1920.

being respectively 206, 843, 540 and 382 sigma.† It appears that simple reaction time is not necessarily lengthened in this condition.

4. Charpentier,[4] under the influence of Janet, starts with the conception of a characteristic " fatigue " curve of reaction time for psychotic conditions. Observations with 15 subjects are reported. A single experiment with each subject was uniformly continued " until the subject's exhaustion " (failure of cooperation?). Numbers of observations thus obtained range from 68 to 663, average 311. The results are presented in detail to throw light on the immediate work-curve phenomena in the cases, but the curves, representing different psychoses, cannot be said to demonstrate systematic variation. Central tendencies range from 169 to 618 sigma (average 347), the three depressions and one excited case having notably long times.

5. A series of observations, few for each case, but with extremely accurate technique, is reported by Diefendorf and Dodge.[5] These concern the eye-movements. It is pointed out that the eye reaction employed is a slightly more complex reaction than the ordinary simple reaction, and this is cited in partial explanation of the length of the times found. Their norm is 209 sigma, reduced by instrumental constant to about 194 sigma. This is shorter by 43 sigma than the norms of the visual reaction in the present experiments. Averages for the different psychotic groups are as follows:

M. D. E.	M. D. D.	D. P.	G. P.	Epil.
224	266	222	246	229

6. A series of more intensive experiments is reported by Franz,[1] with two depressed and two excited subjects. Numbers of observations ran into the hundreds for each subject, the experiments covering periods of 7 to 15 weeks. Timing was with the Hipp chronoscope, the stimulus the click of a telegraph sounder, considerably more intense than here used. Reaction movement was releasing a telegraph key, the same as in the present experiments. In both depressions and excitements the times are slower than normal, and the depressions are slower than the excitements. The

† Choice between movement and rest. The figure 206 is without significance as a choice reaction time, as this subject reacted indiscriminately.

first week's observations, those most comparable with the present data, are as follows:

	Norm.		Exc.		Depr.	
Subj.	B	F	C	P	Ed	Ev
Average	165	157	183	185	191	299
M. V.	15	18	23	24	35	80
No. Obs.	80	140	240	240	120	120

7. The shorter normal times (relative to the present data) obtained here are probably accounted for by the louder stimulus employed by Franz. The M. V.'s are considerably greater in the depressed. In another study, a third depressed case observed by Franz [6] showed similarly long reaction times. In this connection allusion may be made to the anomalous lengthening of simple as compared with choice reactions, observed by Franz in one of these cases.

8. With the simple technique of the Vernier chronoscope, Rowland [7] compares observations with 35 delinquent girls and as many Mt. Holyoke students. Eleven delinquents and five students gave reaction times over 200 sigma; absolute figures are not reported.

9. The most extensive observations of reaction time in pathological cases are reported by Bevan Lewis.[8] These include reactions to both sound and light stimuli, and include not less than 20 reactions per unit series. Various diagnostic groups show central tendencies as follows:

	Norm.	Exc.	Dep.	Gen. par.	Epil. psych.	Alcoh. psych.
No. cases	5	5	15	13	7	24
Sound Reaction Av.	146	186	203	195	210	206
M. V.	13	15	39	22	29	23
Light Reaction Av.	186	236	242	246	237	256
M. V.	19	9	34	24	25	18

This is perhaps the group of observations most directly comparable to the present data, and is further discussed in connection therewith.

10. From the foregoing it emerges that in psychotic conditions, simple reaction time is very generally lengthened above the normal average, but not necessarily so. Diefendorf and Dodge find little reflection in the reaction time of the severity of the condition.

Characteristic difference is not established between different types of mental disease, though when groups of excitements and depressions have been compared the average of the latter has been longer (Franz, Dodge, Bevan Lewis).

11. The galvanometer chronoscope as developed by Klopsteg[9] gives a method somewhat more suitable for pathological application than those previously available. For intervals of the present order, a D'Arsonval galvanometer such as might be used for the "psychogalvanic reflex" provides a chronoscope noiseless, automatically setting to zero, mechanically simple and easy to calibrate. A disadvantage is that the beam of light remains but momentarily at the place of reading; accuracy requires some practise and much care. Neither can reactions be taken so rapidly as with other methods, six per minute being a fair rate.

12. Essential conditions of the present experiments have been elsewhere described.[10] Reactions are by releasing a telegraph key with the right hand, 108 to sound and 108 to light, for each subject at one sitting. With many of the present subjects, such experiments were repeated various numbers of times. The results of these repeated experiments are complicated by changes in the clinical condition of the case, and left for discussion therewith. The present remarks concern the initial experiments with each case. The total number of observations is 7992.

13. The cases concerned are accordingly 37 in number, being distributed according to diagnosis as 6 manic-depressive excitements, 17 manic-depressive depressions, 5 dementia præcox, 4 general paralysis, 1 organic cerebral disease, 4 unclassified, of whom two are "psychopathic personalities," one neurotic and the other arteriosclerotic.

14. First is considered the general reaction tendency as given in the combined reactions for light and sound in the different psychotic groups. These results appear in the following table:

	Norm.	MDE	MDD	DP	GP	Org.	Uncl.
No. cases	13	6	17	5	4	1	4
Av.	221	253	247	237	278	452	285
M. V.	26	48	37	21	11	X	38
IQ (Stanford Scale)	(87)	90	90	87	77	56	X
M. V.	X	9	10	5	12	X	X
Av. (Bevan Lewis, derived)	166	211	223	X	220	X	X

15. The present data show differences from those of Bevan Lewis and of Diefendorf and Dodge. Bevan Lewis finds more difference from the normal than appears here. Also the psychoses are not similarly affected; excitements are more rapid than depressions, and general paralytics between them. Except for the depressions, the numbers of cases are smaller in the present data, but the observations per case are considerably more numerous.

16. Here, excitements and depressions show, in average, no mutually distinctive effects on simple reaction time. These cases vary among each other more than the normal, *cf.* the M. V.'s, and generally in the direction of longer times. The excitements vary more than the depressions. The lengthening of time in depressions cannot well be interpreted in terms of "psychomotor retardation," as similar lengthening is found in excitements, and in other psychotic conditions; it is also not proportional to the amount of retardation clinically observable.

17. The small group of dementia præcox cases show the least change from the normal, and it is noteworthy that they vary among each other distinctly less than the normal. These are cases without grave intellectual lowering, as is shown by the intelligence quotients. With general deterioration the reaction time is greatly increased in length and irregularity.

18. The four general paralytics were in early stages of the disorder. The figures give impression of more regularity than exists. As will later appear, this group contains some extreme differences in reaction tendency for sound and light. The lengthening of the general time is expression of unusual difficulty with the light reactions; enough to suggest special neurological interpretation.

19. The unclassified group afford further evidence that the lengthened reaction time is in general the product of superficial conditions, that may appear in any type of mental disorder. For further study it must be checked against other measures, affecting other mental levels, such as controlled association tests, or measures of general intelligence. In this latter respect a group difference is distinct with the general paralytics. Here a lengthening of reaction time has gone hand in hand with a reduction of intelligence quotient and a relatively greater variation in the same.

20. The quickness of reaction is a criterion of the immediate attentional level. The psychoses considered show some difference

in the regularity with which the general level is maintained. This function of the experiment is expressed in a figure termed the quartile ratio, this being the per cent which the upper quartile is of the median in each unit-series of 27 reactions. On this point the figures for the different psychotic groups are as follows:

	Norm.	MDE	MDD	DP	GP	Org.	Uncl.
Av.	113	113	113	121	122	129	150
M. V.	2	2	2	10	13	X	48

21. None of the manic-depressive cases shows this figure above 117. When a figure higher than this has appeared here, one has been dealing with a less benign condition than the manic-depressive psychosis, which may, however, be constitutional. The manic-depressive conditions do not show abnormal fluctuations in this type of attention; the other conditions often do.

22. The data may be examined with respect to the comparative reaction times for light and sound. This is expressed by the per cent which the light time is of the sound time, here termed the "sound-light ratio." This is as follows in the different groups:

	Norm.	MDE	MDD	DP	GP	Org.	Uncl.
Av.	117	118	120	108	139	94	119
M. V.	8	11	15	7	26	X	14

23. Again there is practically no deviation from the normal average in the manic-depressive groups, though their variability is greater. The schizophrenic and general paralytic groups on the other hand differ markedly from the normal and in opposite directions. The schizophrenics tend towards leveling—towards taking about as long for one kind of reaction as the other. Two of the general paralytics, both still of well ordered behavior, have special difficulty for light reaction, the performance of the other two being within normal limits. In the organic cerebral case the light reaction was faster than the sound, both being extremely slow. Apparently organic changes tend to disturb the normal relationship, the more functional disorders of dementia præcox rather to level it out.

24. Neurological changes offer a facile interpretation of the former result. The latter is less easily dismissed. The longer reaction time to light of normal observation is supposed to be due to more complicated nervous connections, and the equalization of

these is not readily brought under any theory of schizophrenia. If the difference were overlaid by a general apathy the times should be much longer. The question must be left for the accumulation of more data, which have possibilities for diagnostic use.

25. Normally the attention, or alertness, fluctuates an insignificant hairsbreadth more for sound than for light. The psychotic averages differ by one to four per cent from the normal. Very markedly greater fluctuation for light than for sound was observed in two cases only, one a schizophrenic, the other a general paralytic. Markedly greater fluctuation for sound than for light was observed in three manic-depressive cases only.

26. To sum up, these experiments accord with previous work in finding reaction times generally lengthened in psychosis. Individual differences are increased save in the schizophrenic group. The manic-depressive group alone shows a normally small amount of fluctuation of attention to the reaction process. The dementia præcox group has a smaller sound light ratio, the general paralytic group a larger sound light ratio than the normal, to which the manic-depressive group closely approximates. In general, while normal performances in these functions are to be found individually under any diagnosis, markedly abnormal performances are more characteristic of malign conditions.

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AN EXPERIMENT WITH SIMPLE TESTS FOR THE INSANE.

By MARJORY BATES,
Psychologist, Worcester State Hospital, Worcester, Mass.

Except for the work with association tests the large majority of psychological experiments conducted with the insane have been those requiring rather complicated apparatus and feasible only in a hospital possessed of a well-equipped laboratory. Many hospitals, while they are unfortunate in this respect could, nevertheless, use to advantage certain simple tests which had been studied with a special view towards aiding in diagnosis and in prognosis. For this reason it was thought worth while at the Worcester State Hospital to try out several tests with this particular purpose in mind. The summer's work has been completed; it is now the plan to follow up the patients who have been observed and to compare their condition four or five years hence with the records they made during the experiment just finished. This checking-up process will furnish material for much more accurate, and, we hope, more valuable conclusions than can be reached in the present paper, which, indeed, is merely a preliminary report of the work thus far accomplished.

Forty patients in all were studied, 20 men and 20 women. None of them had been in the hospital at the beginning of the experiment for more than four months. They were selected with the help of the physicians as being those cases having, if not a slight hope of recovery, at least some prospect of doing useful work about the hospital. The obviously chronic cases and the very feeble old people were not included. The diagnosis of the patients did not influence the choice of subjects; a large number of the patients, in fact, had not been diagnosed when the work was begun. The ages ranged from 19 to 82, but the majority were around middle age.

One of the tests used was the association test of Kent and Rosanoff, with the authors' original procedure. Only the first 50 of the hundred words, however, were given. For this there were

several reasons; certain preliminary tests seemed to indicate that results obtained with 50 words do not vary in any marked degree from those obtained with a hundred; the shorter series seemed more practical both because it is not too long for the patient who is apt to get restless, tired or a bit stubborn, and because it takes so much less of the experimenter's time. This latter consideration was especially important when, as was done here, each patient was given the same list of words a second time, not less than a week later than the first, and the results studied and compared rather minutely. Partly because of lack of time and partly because several of the 40 patients had only a slight command of English the number of those given the association test was limited to 10 men and 10 women.

The other tests besides the association test consisted in several puzzles, and two drawings to be copied. These, except the harder puzzles in cases where ability was obviously quite lacking, were all used with each of the 40 cases. The puzzles were the familiar Healy A and B performance tests and a puzzle gotten out by Richter and Co. The latter is made up of seven blocks which can be arranged in a great number of different shapes. For one puzzle with these blocks only four pieces were used—four right-angled triangles, two of these each one-fourth the size of the other two, and the task was to include them all in an equilateral triangle with projections (made of the two small right-angled triangles) on two sides. This is somewhat more difficult than putting together the plain equilateral triangle in the Healy Picture Form Board. The other puzzle made of the Richter blocks required all seven to be fitted into the shape of a large right-angled triangle. This was a very difficult puzzle and was given not so much to test skill as to test perseverance. The subject was usually allowed to continue as long as he cared to do so,* though he was never urged to go on if he answered affirmatively to the question, "Do you give it up?" In order that learning ability and eagerness to improve might be brought out each of the four tasks described above was

* This method would seem somewhat wasteful since many of the patients worked for 30 minutes or over before giving up, but the experimenter so arranged it that she had other work which kept her busy during the period and at the same time did not disturb the subject.

generally given twice more if the subject succeeded in the first trial. In case the first trial proved a failure, the puzzle was put together by the experimenter and the subject given at least one more chance. If the second try was unsuccessful, however, the work with that particular test was discontinued.

There were two drawings to be copied. One was a spiral with five turns, the other was a complicated nonsense drawing. This latter, it was thought by the writer, might bring out certain peculiarities which would not be called forth at all by a simple, sensible drawing. Contrary to expectations, however, practically every patient went about copying the meaningless thing in an extremely matter-of-fact way. None remarked on the absurdity of being asked to draw it. Moreover, only two cases gave any evidence of having added their own meanings to the drawing. The performances in these tests were judged according to types, the spiral according to types made up of the various combinations of good proportion, evenness of line, neatness, and their opposites, the nonsense drawing according to types made up of the various combinations of good proportion, the copying of all parts, or practically all parts, with fair correctness and in the proper places, and neatness, and their opposites. The type combining all the good qualities was considered the best performance, that combining their opposites the worst. Otherwise degrees of excellence were not taken into account.

In addition to the testing a record was made of the writer's general impression of every patient, as well as a brief history of every case.

Later on, when all the patients will be divided into at least two large groups, those who became worse, or remained the same, and those who became better and were discharged from the hospital, the present results can be gone over from a new point of view. Just now little can be concluded, not only because the time is not yet ripe for obtaining facts of prognostic value, but also because a considerable number of the cases are still undiagnosed, and the thorough study of them from a diagnostic standpoint is impossible. The largest group at present happens to be that of dementia præcox paranoid; the other classifications are only sparsely represented. From the 25 cases which have been diagnosed, the following seems to be indicated:

1. The number of individual reactions in the association test, excluding those considered normal in the Kent-Rosanoff appendix, is invariably greater in those cases where the manner of the patient is very noticeably abnormal. Only one exception to this was found, the case of a depressed manic depressive who was able to talk in a perfectly reasonable manner, though he was emotionally abnormal.

2. The cases of dementia præcox showed the greatest variation among themselves in all the different aspects of the association test studied, in number of individual reactions, number of reactions of value over 10.0, number of incoherent reactions, number of repetitions within a series, and in number of repetitions between different presentations of the same series.

3. Excellence in puzzle work is not correlated with abnormality of manner, but it is correlated with the diagnosis of dementia præcox.

4. Excellence in drawing is also not correlated with abnormality of manner, but it is correlated with the diagnosis of dementia præcox even more strikingly than excellence in puzzle work.

5. The cases of dementia præcox show the greatest and also the least perseverance of any of the cases so far studied, though the cases showing the least perseverance are suspected by the writer of having had a somewhat feeble-minded basis to begin with.

6. Improvement in the time required to do the second and third trials of the puzzles was almost universal and where it did not occur seemed to indicate nothing in particular.

7. The cases of dementia præcox were the only ones in which instances of a really great lack of any attempt at perfection was shown. One case of imbecility and three cases of dementia præcox showed no apparent interest in the testing. Two of these latter were also somewhat stubborn. All other cases of dementia præcox as well as the remaining cases showed no stubbornness, with the exception of one case diagnosed provisionally as general paresis.

8. Neither age nor date of onset of the psychosis seems in itself to have any bearing on the results.

9. It seems probable that the future records of the patients will show that abnormal results with the association tests serve as a fairly good indication, especially when considered together with attitude and manner, of the presence of a psychosis, and possibly also of inability to get along in the world.

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A DEFECTIVE MENTAL MAKE-UP AND THE PERNICIOUS FORMS OF TORTICOLLIS, TINNITUS, NEURALGIA AND PRURITUS.

By LELAND B. ALFORD, M. D.,

(From the Department of Neurology, Washington University School of Medicine, St. Louis, Mo.)

In consequence of present day activity in investigating the mental disorders there have been numerous suggestions for readjustments in the nomenclature, classification and general conception of the nature of the psychoses and neuroses (psychoneuroses). The suggestions have mainly concerned the common forms of these conditions; certain less frequent forms generally classed with the neuroses although obviously differing in nature from the common run of these, on the other hand, have not received the attention they merit. It is with a series of the latter which have certain features in common that this paper has to do.

These latter forms—the pernicious types of tinnitus aurium and pruritus of the ano-genital region, trifacial neuralgia and spasmodic torticollis—with a few apparent exceptions which will be considered later, have in common the following positive and negative characteristics:

Onset in middle life.

Slow progression, once well established.

Stability of clinical picture.

Resistance to treatment.

Predominance of one symptom in clinical picture.

Obscure pathology.

Functional nervous origin.

Absence of preceding and attending neurotic symptoms of common types (variability, suggestibility, fatigability).

Occasional associations of unfamiliar neurotic and psychotic reactions.

In view of these common characteristics, it seems justifiable to assume that these forms may be of a similar nature, despite the

diverse symptomatology, and to attempt to find a common factor that will explain the similarity.

It will appear later that the common factor is thought to be a defect of obscure nature which is mainly limited to certain assumed functional (biological and physiological) units of the nervous system and perhaps of the related peripheral structures as well. This defect, it is assumed, accounts for the prevailing symptomatology and also for the peculiar mental deviations which may be added to it. The conception is novel and, if accepted, should prove of further service in the investigation of mental affections.

Mental Deviations in Tinnitus Aurium.—These deviations will receive most attention because the investigation at first was concerned with them alone and because there was here a much larger material for observation.

The mental peculiarities found in association with severe tinnitus are usually mild and would escape especial remark, were there not intermediate stages of all degrees to link them up with the definitely paranoid and hallucinatory states. There is no definite line of cleavage any place between the mild and severe forms, where the break is traditionally assumed to occur, but the point of separation is rather to be found between the mental peculiarities associated with tinnitus and the classical neuroses and psychoses.

The milder forms of mental peculiarities consist of a certain air of abstraction and gravity of demeanor together with a limitation of interest and tendency to introspection. The patient seems always to be intent on his murmur which he describes with great detail and nicety in regard both to form and location. He is furthermore subject to fits of irritability and depression, the latter occasionally eventuating in suicide, and describes extreme "nervousness" especially during and immediately after exacerbations in the severity of the tinnitus. Little evidence of this nervousness is to be seen by the observer, however, and such neurotic characteristics as variability, suggestibility and fatigability are certainly absent. It is remarkable that with all their suffering these patients should be able to continue their work, whether it be mental or physical in nature, with their usual proficiency, but such is apparently the case. In some cases, finally, and often where least anticipated, evidence of suspiciousness crops up. One patient, for instance, asks suspiciously why a record of his case is made.

Another is said by relatives to be unduly diligent in picking small dark and solid particles from her food. She also sometimes expresses the fear that persons passing along the street in front of the house may be robbers planning a means of entrance. This paranoid trend is more in evidence in the following case:

J. D., male, aged 61. Complains of deafness and head noises. Deafness began before age of 20 as a result of ear disease following measles. Noises began two years later and for many years now have been a source of great suffering. They are "like machinery" and are "tremendous." "It is not an ear noise but a nerve noise." He localizes them in the head above the ear and "very deep." Says they seem to be getting more severe. Patient believes people make fun of him in the street and expresses strong resentment toward several physicians who, he believes, treated his ears improperly years ago. Occasionally has trouble with neighbors. Speaks of having "enemies." Brings for analysis a jar of milk which he has kept for several years believing it was poisoned by an enemy. Has asked local authorities to look into the matter. Thinks there is a snake in his stomach. Is not sure that his fears are not all imaginary and asks opinion of examiner.

Says he has always been sensitive. In childhood other boys tormented him. He still "worries" over one of their tricks which consisted in telling him that urine had been put in his drinking water. He continues to work hard as a farmer.

Physical examination negative, except for slightly elevated blood pressure. Ear diagnosis: chronic catarrhal otitis media and otosclerosis.

In this condition the "noises" themselves manifest great variation in form and complexity. Most common are the sundry blowing, hissing, buzzing and ringing sounds, but occasionally they are more complex as when they are described as being "like machinery," or "like a dynamo," or "like music," or as taking the form of a particular melody. Finally there is the complication of "voices" which may appear only on rare occasions or may be constant and multiple as in the case described below. No less important is the localization of the noises. They may appear to come from surrounding space, the ear, "deep in the head," the forehead, face, neck, etc. In the following case there were numerous auditory hallucinations:

F. H., male, aged 52. Complains of deafness and voices in head. Can hear only what is shouted at him. Hears constantly a hissing noise and seven voices which give forth a great deal of "foul, wild language" in English, German and other languages. These voices interfere with his work and wake him at night. At first they were located in the ears but have shifted

into the head and mouth. At times he wakes up frightened, believing somebody is pulling at his heart strings. May shout in answer to the voices during the night. Has very vivid dreams.

He is able to continue at his work as financial writer for a newspaper. Wife says there have been no conduct disturbances but irritability and depression are sometimes shown. His insight is perfect.

Deafness began in one ear 20 years ago and in the other 10 years later. Tinnitus first noticed 15 years ago and two years ago the voices appeared. Fifteen years ago was depressed for a few months. Mother and mother's mother deaf. Mother had tinnitus but no voices. No insanity in the family.

Physical examination negative. Ear diagnosis: Nerve deafness, chronic catarrhal otitis media. No change during the two years the patient has been under observation.

In neither of these cases is the psychosis easy to classify. The former case might be regarded not as a psychosis but as the natural psychopathic reaction of a solitary and individual further handicapped by deafness and tinnitus. It certainly is not one of true paranoia, nor of a paranoid form of dementia præcox. The latter case is definitely one of psychosis but it also does not fit into any of the classical groups.

Mental Deviations in the Other Forms.—It is impossible to consider these deviations in detail or to arrive at definite conclusions as to their nature because the material studied has been limited and contains no cases of pronounced mental peculiarities. In fact none of these patients demonstrated any peculiarities at all beyond the attitude toward the symptoms. The neurotic nature of the symptoms is indicated by the place they hold in the patient's attention and by the emotional reactions associated with them. Organic symptoms have no such position in the mind of the patient. Compare, for example, the reaction of the patient to trifacial neuralgia with that in herpes zoster. States of irritability and depression occur but not with the same frequency and intensity as in tinnitus. It is noteworthy that common psycho-neurotic reactions are nearly always absent. Here and there in the literature, however, are found brief statements concerning each of these conditions to the effect that neurotic and psychotic reactions are occasionally observed; but from such statements no idea of the nature of the reactions can be formed.

Pathology and Pathogenesis.—In the enumeration of common characteristics given above, the objection can be made that the item, "pathology obscure" does not apply to tinnitus aurium be-

cause certain pathological changes in the aural structures have been described for otosclerosis, the condition with which this type of tinnitus is associated. In answer to this objection attention is directed to the conclusion of Gray[1] who in his recent monograph has given careful attention to the whole subject of otosclerosis. Gray contends that the changes found in peripheral structures are insufficient to account for the entire symptomatology but that it is necessary to assume that changes also occur in central nervous structures concerned with the function of hearing. He adds (p. 154), "The whole organ of hearing from cerebral cortex to the auricle must therefore from the point of view of its evolution be considered a biological and physiological unit; and the anatomical portions though so different from one another in tissue and structure are intimately correlated in their evolution." It will thus be seen that from his point of view the pathology of tinnitus is really obscure.

One can safely assume that there will be no objection to the application of this observation to the remaining forms. As regards trifacial neuralgia, however, it may be said that the tendency of investigators is to assume that the lesion, whatever its nature, affects peripheral structures—the ganglion, nerves, nerve endings or tissues. Only Oppenheim believes that "here neuropathic heredity plays a particularly important part and in many cases it is the only assignable cause of the trouble," and his views have been sharply contested. It is quite natural to seek changes in peripheral structures when the relief from the various operative procedures is so prompt and complete. One naturally assumes that the irritating focus must therefore be peripheral; but it must be remembered that such procedures also deprive certain nerve centers of impulses from the periphery, viz., those coming through the severed nerves. So if the fault lies with one of these centers, it may be corrected when the stimulating impulses are cut off. This latter conception helps explain some obscure facts, such as the decreasing effects of operations on the peripheral nerves and the failure of root section and ganglion resection in occasional cases.

[1] Gray: Otosclerosis, London: Lewis, 1917.

It is unnecessary to dwell further on the applicability of these common characteristics, as otherwise they seem so obviously true as to be beyond dispute.

General Considerations.—We are now in position to consider the reason for the extraordinary parallelism and similarity that has been shown to exist between the various forms of neurosis that are here under consideration and also the explanation of the nature of some of the symptoms.

In Gray's conclusions is found the key that unlocks the door to the situation. This key is the conception of a *defect limited to certain hypothetical functional units of the central nervous system;* and the similarity lies in the nature of the defect. In otosclerosis this defect is assumed to be such as to permit the exhibition of tinnitus; in pruritus and neuralgia, such as to permit itching and pain; and in torticollis such as to allow the muscular movements to take place. In each condition a different " unit " is affected.

The explanation of some of the characteristics noted in the enumeration at the beginning of the paper becomes clear in the light of this conception. These neuroses are largely monosymptomatic because the defect is limited to the so-called unit. For the same reason variability, suggestibility and fatigability do not characterize the patient's mental activity as in the common neuroses; aside from the one defect, the personality is normal and stable. The patient is like the aphasiac whose only defect lies in the inability to recollect certain words. Again for the same reason the neurotic and psychotic symptoms do not conform to classical types. In tinnitus the defect may be such as to favor the formation of hallucinations but it does not interfere with judgment or proficiency. Progression is limited because the defect is limited to the one unit.

In other words, the reactions of these patients are such as we can imagine those of an individual would be if a limited part of his mental mechanism were thrown out of commission.

No attempt will be made here to consider the nature of the defect and of the functional unit in detail; these will perhaps be the subject of a later communication. It may be mentioned, however, that the defect as conceived by Gray affects physiological activities. In this study the original conception of the defect was of one affecting psychical processes, but later this was changed to

conform with Gray's theory. The question of the nature of the underlying pathological changes still remains open. The conception of this sort of functional unit may be used in explaining the mechanism of the other tic neuroses such as blepharospasm and of other conditions like writer's cramp and stammering.

From this hypothesis one obtains a better view point for considering these several conditions. Hitherto it has been the custom to dismiss them, or such of them as were not regarded as definitely organic, as neuroses, which attitude serves to put them on a plane with the common psychoneuroses as regards origin and treatment. Such a comparison is evidently not the correct one and is grossly misleading.

SUMMARY.

The object of this communication is to indicate that the pernicious forms of tinnitus aurium and pruritus of the ano-genital region, spasmodic torticollis and trigeminal neuralgia may be similar in nature and to give the reason for this similarity

It is pointed out that with certain apparent exceptions they are alike as to age of onset, course, resistance to treatment, predominance of one symptom in clinical picture, and central nervous origin.

Tinnitus aurium is found not to be an exception if one accepts Gray's contention that the changes in otosclerosis must affect all parts of the biological and physiological unit subserving the function of hearing.

Trifacial neuralgia is also not necessarily an exception for the evidence commonly supposed to indicate a peripheral lesion is from another point of view equally in favor of a central disorder.

The psychic deviations frequently associated with tinnitus do not seem to conform to classical types of mental disorder. Psychic deviations also are said to occur in the other forms but their nature cannot be ascertained.

The nature of the patient's mental reaction to symptoms in these forms is indicative of something more than a peripheral disturbance.

Gray's conception of a degenerative defect limited to a biological and physiological unit offers the best explanation of the patho-

genesis of these forms of neurosis and gives the reason for their similarity as to age of onset and course, stability of clinical picture, resistance to therapy, predominance of one symptom, central nervous origin, and the association of uncommon psychic deviations. This conception should prove of further service in the study of neuroses and psychoses.

STUDY OF INSTITUTIONAL ESCAPES.

By CHARLES F. READ, M. D., and DAVID B. ROTMAN, M. D.,
Chicago State Hospital, Dunning, Ill.

Modern nomenclature does not alter the fact that state hospitals do more or less violence to the desire of a man to move freely about among his fellows. Just how much an institution for the insane differs from a jail depends to a considerable extent upon the degree to which community life is preserved. In the institutional treatment of mental disorders gross physical restraint such as strait-jackets, strong-rooms and barred windows are fast disappearing. Increasing stress placed upon occupational therapy, industrial occupation and upon various community features of institutional life has resulted in a considerable degree of personal liberty even in the case of patients who are not actually granted the freedom of the grounds. Concomitantly there has been a tendency toward the employment of fewer attendants because patients who are occupied, well housed, well fed and unrestrained are less irritable and dissatisfied and consequently are more easily cared for than under less favorable conditions.

In view of these present trends it has appeared to the writers that some investigation of escapes might be of interest from a medical and administrative standpoint. If we are to carry out this program of greater personal liberty wisely it would be well, if possible, to know what types of patients are most apt to violate our trust and thus perhaps to bring discredit upon the system.

Upon the whole, escapes from a state hospital are not generally looked upon as good types of reaction, though in the occasional case one must grant that such a flight may represent a very healthful protest against confinement.

However, despite this rather commonly accepted view we found upon our records for the year of July 1, 1918, to June 30, 1919, 123 men who had escaped and had not been returned nor heard from up to January, 1920. During this same period 308 men escaped and were quite promptly returned. The number of women

escaping during this time was so small as to be negligible from a statistical standpoint.

No particular apologies are made for what may seem a large number of escapes. The hospital in question is large (3500 patients), upon the outskirts of a great city and without walls or even an adequate fence. Four thousand visitors spread more or less discontent among the patients each week; the patients are foreign born and many do not speak nor understand English; and to make matters as bad as possible, a city street car line passes the grounds. Few patients are over a few miles from home or at least from the cover afforded by mingling with thousands of their fellows. Naturally, under these conditions, there must be many escapes unless the bastile plan be adhered to strictly.

Concerning this large group of men who escaped and were not returned, very naturally the question arose as to what had become of them. Were they able to float for a time in spite of their handicap, or were they soon returned to other institutions in Illinois or elsewhere? Assuming that those not located were able to get along for a time independently or with the aid of friends and relatives, might not a study of their records along certain lines shed some light upon the reason for their flight and extended absence? Also, would the study of a like number of male patients who made their escape during this same period, but who were promptly returned, shed any additional light upon the problem?

Naturally we investigated as far as possible the extra-institutional fate of the patients who did not return (*group A*). A friendly letter of inquiry was addressed to the relatives of each of the 123, and the other state hospitals of northern and central Illinois were furnished with a list of their names. Through this latter source we learned that six had been re-committed. Two have been returned to our institution and one is in an eastern hospital. There remained 116 to be heard from through relatives. Thirty-one letters were returned undelivered and 17 replies were received. Thus, we know definitely the fate of but 25 out of the 123. Of these 25, eight had been returned to institutions again; seven had not been heard from; one had died; one had committed suicide; one was the inmate of a reformatory; three were doing very poorly with an almost total dependence on the relatives; and four seemed to be making a good adjustment.

Of the latter, one had even married. Thus, 3 per cent of the patients in this *group A* have made an adequate adjustment on the outside (16 per cent of all those located).

In dealing with the problem, the following case data seemed desirable for consideration:

Age. Birth (U. S. or foreign). Civil status. Dependents or no.
Occupation (day laborer, craft, or other work).
Personal make-up prior to appearance of psychosis. Alcoholic habits.
Was patient a wanderer, non-resident, friendless?
Nature of psychosis and length of hospital residence.
Was there a marked paranoid trend or a distinct loss of interest?
Before escape was the patient idle or industrious?
Prior escapes and paroles.
When patient eloped was he recovered, improved, or unimproved?
Was his conduct prior to commitment or in the hospital antisocial in any way?

The above data would seem to have a bearing upon the question that inevitably arises in cases of prolonged absence; *i. e.*, were we wrong after all in attempting to keep the patient in the hospital since he would seem to have gotten along upon the outside for a considerable length of time without social misconduct marked enough to bring about his return? One with some experience in institution practice realizes that at times conservatism suffers a rude shock when a case that appears to be a bad risk, from the social viewpoint, is paroled against the advice of the medical staff and contrives somehow to make a surprisingly good adjustment upon the outside.

Let us then proceed with what analysis we can make of 123 cases of a naturally selected group (*group A*) with the hope that it may shed some light upon the problem of escapes in general and in particular upon those followed by prolonged absence, and let us compare with this group another (*group B*) of 118 men chronologically selected from a total of 308 who escaped and were quite promptly returned.

AGE.

Group A.—Eighty were under 40 when they left the institution (65 per cent), a confirmation of the accepted dictum that initiative begins to recede after 40, or biologically expressed, that with increasing age the organism becomes less mobile. However, a

number of old men do appear in this group. Among them first honors go to the man who escaped at 76, a senile paranoid. Another man, 68 years of age, made good his escape though diagnosed as a paretic; and still another deserves mention, a farm laborer of 20 years' residence in the hospital who had made no prior escape.

Group B.—Practically the same figures obtain in this group. Seventy-eight were under 40 years of age (66 per cent).

BIRTH.

Group A.—Seventy-four (60 per cent) were foreign born. Since the foreign born comprise half of our admissions from year to year, it would seem from this showing that the native born accept the idea of hospitalization rather more readily than the foreign born and are less apt to make an instinctive flight from an environment they do not fully comprehend. There is no doubt, too, but that language difficulties play a great part in preventing the establishment of an understanding between the foreign born patient and the ward doctor and his assistants.

Group B.—In this group 55 were foreign born (46 per cent). Thus we find for the two groups combined that the foreign born made a total percentage of escapes (55 per cent) approximating that which they represent in the general admission rate, and the conclusion arrived at above must be revised. About the same number of foreign born as native born escape, but fewer in proportion are returned; this, very possibly, by reason of the desire of their friends and relatives to assist the patient to keep out of an institution that is looked upon as penal rather than curative in function. And yet again may not this indicate some failure upon our part to estimate properly the foreign born patient's possibilities of adjustment in his own community?

CIVIL STATUS.

Group A.—Ninety-six were single or separated (78 per cent). Twenty-seven were married (22 per cent). This very considerable difference, though doubtless significant, is difficult to evaluate. Possibly the single man accustomed to act only for himself, is more apt to obey the flight impulse, while the married man, though worried over the financial condition of his family and drawn by

ties of affection, must nevertheless consider what effect his flight may have upon their future as well as his own.

In *group B*, 66 were single or separated (56 per cent) and the two groups together show 67 per cent without family ties. That is, the percentage of single men remaining out upon escape exceeds the percentage in the combined groups. Upon the other hand, relatively twice as many married men were returned as remained out upon escape. What factors enter into these conditions can only be suggested; *i. e.*, for the married man family trouble or anxiety for his safety or that of his wife or children may precipitate return, whereas in the case of the single man there are less intimate contacts, more freedom of movement in society, and hence less observation, less responsibility, etc.

FAMILY TIES—RESIDENCE.

Group A.—Twenty-nine were wanderers. Twelve were non-residents. Six only were friendless. These groups overlap somewhat and represent in all 35 individuals (28 per cent).

This sub-group contains the logical and quite inevitable elopers: the floaters, some doubtless with previous hospital residence in other states and very possibly again committed elsewhere after leaving us. It represents the floating psychotic population of the country—the feeble-minded, alcoholics, old dementia paranoides and hebephrenics—all of them but insecurely sustained at the best and ready to sink to the bottom under any slight increase of their burden.

OCCUPATION.

Group A.—Forty-two had followed a definite craft before admission (34 per cent). Fifty were laborers. Thirty-one had followed various lines of work.

That is, 92 of the group were prepared as a result of former experience to make a living as soon as they escaped, a fact contributing, of course, to their remaining out some length of time (in a labor-hungry market) provided their behavior would pass muster under the eyes of a not too critical foreman.

Group B.—Sixty-two were craftsmen (52 per cent) and many were laborers. Upon this showing the possession of a craft or experience in hand labor would not seem to contribute to the patient's length of stay upon the outside.

PERSONAL MAKE-UP PRIOR TO COMMITMENT.

We regret that the data obtainable from our histories along this line were so meagre as to make conclusions quite impossible in any ponderable number of cases. This is a good argument for better history taking, but a disappointment where we had hoped to obtain some very helpful information.

ALCOHOLISM.

Only markedly alcoholic patients were so classified. In *group A*, 42 (34 per cent). Alcoholism would doubtless prove to be a severe handicap in the course of time, though many chronic alcoholics when paroled have, in our experience, gotten along fairly well for several months.

In *group B*, 55 were alcoholic (47 per cent).

PSYCHOSES.

Dementia Præcox.—In *group A*, 58 were classified as cases of dementia præcox (47 per cent), of which 40 were hebephrenics, 14 paranoides, two catatonics and two simplex types. Our proportion of paranoidal forms we have found disappointing inasmuch as one might expect a larger number of permanent escapes from this group. It is possible that not enough stress has been laid in our classification of præcox types upon their paranoidal features. The admissions in other states show a much higher proportion of paranoidal forms than our own.

In this group the case of Frank G. is rather typical.

He was admitted February 27, 1919; aged 39; a native of Prussian Poland; in the United States many years. His marriage was unsuccessful and patient has completely lost track of both his divorced wife and son. He was picked up in a bewildered state and offered a policeman five thousand dollars to release him from his persecutors.

There had been a distinct split between the patient's vocation in life and his avocation. His vocation was variable and fitted the hour. In turn, he had been a machinist, a stock salesman, and at one time even a promoter of stock for a new patent. In his deterioration he had sunken to the level of a day laborer. His avocation was music. As his psychosis developed he traveled from place to place with his music. Casually he mentions in his story the following stop-off places: Los Angeles; Minneapolis; Aberdeen; Elgin; Ironwood, Mich.; Denver; Cheyenne; Nashville, Tenn.; O'Fallon, Ill.; St. Louis, Mo.; and Chicago. During this time, a period of some five

years, he made his living as a "hack" player in the nickelodeons and the cheaper orchestras, with a maximum salary of twenty-five dollars a week. With his work came gambling and drinking through association with his fellow musicians. Regular losses at cards kept him practically penniless. During the war he was employed for a short time in government munition plants where ideas of reference concerning his fellow employes kept him in an agitated state. His psychosis took on a sudden increase in intensity and severity about the time of the war's close when hallucinosis began to interfere with his work. As he played at night he would hear slurring remarks made about him some place "back of the theatre." Soon he began to identify these voices as those of his own wife and son. Often he would flee from his last job without even going to his room for his few belongings. His hallucinosis soon began to envelop the entire world and the prominent men began to talk to him. Finally, in St. Louis he slashed his wrists, and after recovery left for Chicago where the police picked him up as described.

Here he was well behaved, but extremely suspicious. He proved to be industrious and was to play for the patients during their calisthenics, but fifteen days after admission slipped away. Of his fate we know nothing. Has this "Music Master" been picked up again and is he at present in another hospital; is he playing for the pictures in the movie just around the corner, or has he sought rest from his troubles in an unmarked grave?

In *group B*, 60 were dementia præcox (50 per cent), seven were paranoid forms, the remainder hebephrenic. The percentage in the two groups is essentially the same and represents fairly well the percentage in the hospital. That is, they do not seem to run away any more than other psychoses in proportion to their numbers; in fact, even less so when one takes into consideration the fact that this group as a whole is the most able-bodied in the hospital.

Alcoholic.—In *group A*, 13 were alcoholic psychoses—five cases of hallucinosis, eight delirium tremens. This is a group from which recoveries might well be expected, with at least a temporary return to civil life. In *group B*, 16 were alcoholics—almost all chronic deteriorates.

Undiagnosed.—14 in *group A* had been left undiagnosed—a group in which recovery runs high. Atypical symptomatology not infrequently indicates the possibility of considerable improvement, if not of recovery.

Feeble-Minded.—Five were feeble-minded in *group A*. The feeble-minded are more easily reconciled to institutional supervision because they have been accustomed to direction at home. The discovery of but two in *group B* makes a total of seven out of

241 escapes, a finding which would seem to warrant the above conclusion.

Manic Depressive.—Six in *group A* were manic depressives: a significant figure inasmuch as our admissions show one manic to every four dementia præcox cases, while in the group under consideration the ratio is but one to ten. It might be fair to conclude from this finding that the manic depressive with all his flightiness and press of activity has better sense than to escape. Often, too, he is a re-admission, already acquainted with hospital life and aware that release will come again in due time.

In *group B*, eight were manic depressive, supporting the observations made on *group A*.

Paresis.—In *group A* there were 14 cases (10 per cent). One of these was 68 years old and was probably sequestered by his wife.

In *group B* were 20 cases (15 per cent). The percentage of the combined groups represents something more than that in the general hospital population, from which it may be inferred that a paretic is proportionally more apt to escape than other types, save possibly the alcoholic.

Others.—The remainder were scattered types too few in numbers to have a group significance.

LENGTH OF TIME IN HOSPITAL BEFORE THIS ESCAPE.

In *group A* there were 71 (57 per cent) who had had no prior escapes or paroles and thus furnish the cleanest group for consideration in this connection. Of these 71, 44 escaped in less than six months after admission, 18 more escaped in less than two years, eight more in less than five years, and eight five years or more after admission. Fifty-two had made prior escapes. Twenty-four had previously been paroled from the hospital. In all, 49 patients had made 97 prior escapes, an average of two each.

In *group B*, 74 (62 per cent) had made no prior escapes. The apparent *reductio ad absurdum* that the man who has never escaped before is most likely to escape may, of course, be explained by the fact that so many escape within a few months of admission.

Of the entire group, 51 made their final escape (from the viewpoint of this article) within six months and many within one to two months of admission. Probably for this very reason they were better fitted to make a social adjustment after the first blaze of the

psychosis had died down and before they had become too thoroughly institutionalized. Certainly, as the period of internment lengthens, escapes become fewer and fewer and the man who finally eloped and remained out after 21 years of hospital residence stands out as a unique figure. Unfortunately he behaved himself so well while in the hospital that there is practically no record concerning him. It would be interesting to know what stimuli gave rise to his final determination to cut loose from the bonds of 21 years.

In this connection it may be of interest to cite the case of John S. just returned and who, while not one of this group, illustrates very well a type of patient who escapes and remains outside for some length of time.

He was first admitted to the hospital in 1914 when 25 years of age, a laborer, and single. He was then said to have been apparently an old case of dementia præcox, and upon questioning confessed to having been in another state hospital five years prior to this, when he was about 20 years of age. He was diagnosed as a case of dementia præcox, hebephrenic type. He made his first escape in 1918 and was promptly returned. In 1919 he was paroled and returned in a few months because he was "too restless." At that time he was also said to be quite irritable and deteriorated. He escaped again in April, 1920, and was returned from this escape August, 1921, after being apprehended in a neighboring state. When received he was in good physical condition and eager to leave again.

From his account it would seem that on his escape he went to a free employment agency and was shipped out to Cleveland where he worked seven days upon the railroad and was discharged. From there he was shipped by an employment agency to Pittsburgh where he worked thirty-five days and quit because the work was too hard and because he had plenty of money (sixty-five dollars). He then came back to Chicago where he worked in a restaurant for a time washing dishes. He remained with a sister almost all winter because he could get no other work, receiving board and fifty cents a day. In the spring he looked for work upon the farms in the neighborhood of the city, but found a good job hard to obtain, though at last he secured a place where he received fifty cents a day and his board and clothing. During the summer months prior to his return he did odd jobs, bummed and begged, slept in lodging houses, out in the parks, etc. Just before his return he went to La Porte, Indiana, to get farm work and was arrested "while sitting beside the road." He has no complaints to make of his treatment upon the outside, although what would have happened to him could he not have taken refuge with his sister during the winter is problematic. He never traveled with other men because he was "afraid" to go with them.

The case is especially interesting because this obviously insane patient, stamped as an old deteriorated case of dementia præcox, with a decidedly odd manner of talking, has floated with his sister's help during 15 months absence and was arrested, according to his own statement, but the one time and that just prior to his return to the hospital.

In *group B*, 29 (24 per cent) made their escape of this report within six months of admission but many of these had made prior escapes.

Thirty-eight repeated their attempt, some many times over in the year and a half following the period under discussion.

Thirty-six were subsequently paroled and of these only 12 are now in the hospital. Three are known to have died.

Twenty-three (20 per cent) escaped during this period after five years residence and of these, six (or 24 per cent) had not made a prior escape.

Fifteen who escaped after five years residence did not make another in the following 18 months.

Forty-four patients (36 per cent) had made 172 prior escapes or *nearly four each.*

Thirty-eight made 70 subsequent escapes in 18 months.

As an extreme example of the recidivist type of eloper, of whom there are many in *group B,* Clifford B. is interesting.

He first appears upon our records in 1916 at the age of 47, stating that he had gone to school only to the third grade and began to help his father in a butcher shop at age of seven. Shortly after this he began riding race horses; worked about stock farms, livery stables, etc., starting to drink when ten years of age, using Hostetter's Bitters as was the custom of the stable boys with whom he worked. He had his first attack of delirium tremens at 28, and stated that since this he has had sixteen attacks! He had taken the "cure" several times and started in drinking again promptly, and had been confined in the House of Correction about twenty times! He married at 19 and was separated; no children. When examined there was no evidence of a psychosis, although he was evidently of a psychopathic make-up.

Since the above examination was made this patient has been in and out of the institution innumerable times, escaping at his pleasure no matter what ward he is placed in. He is a psychopathic delinquent too clever to be kept in an institution against his will and incapable of caring for himself upon the outside. Although

he has remained out a few months at a time, he is usually returned within a few days or weeks at the most.

MENTAL CONDITION.

In *group A* two alcoholics at the time of their escape were apparently recovered, though detained for educational purposes. Fifty (40 per cent) were improved. Many were careless hebephrenics. Very few had a persecutory trend. The majority were upon locked wards and of these many were idlers. Few enjoyed ground privileges. In a large number of cases it would appear that the patient's escape was an instinctive, animal-like flight rather than the result of planful thinking. Certain it is that in the mind of even the deteriorated there often remains the fitful flame of a desire for freedom though unaccompanied by plan as to what shall be done with this liberty once it is gained.

ANTISOCIAL TENDENCIES.

Only a very tentative statement can be made in this connection. Thirty (24 per cent) in *group A* had shown anti-social tendencies prior to commitment; *i. e.*, wife beating, sex misdemeanors, paranoid outbreaks, petty crimes, etc.

In *group B* there were 24 (20 per cent) of these cases.

Rather slight investigation would seem to indicate that about 7 per cent of our admissions have anti-social histories.

Over and against this discrepancy of percentages must be placed a fact and a tentative conclusion: First; that elopers have not behaved badly upon the outside so far as our information goes. Second; that flight is a reaction most apt to occur in those whose emotional fires have burned brightest and even in the presence of deterioration, continue to flare up from time to time. Once the flight has taken place the flame expires and nothing further happens; that is, not enough affect remains to produce any particularly anti-social conduct. In those whose interest remains more keen it is probable that the patient has learned a lesson, by reason of which he behaves well for a time at least.

SUMMARY.

A formal summary of a subject of this character is impossible but from the above analysis it would seem clear that the average

eloper is not the "bad man" of popular fancy. Certainly, there is no justification for the terrifying picture so often painted by the press of the dangerous *moron* rushing madly from the asylum for the sole purpose of gratifying his perverted desires at the expense of the innocent and unprotected. Our records fail to disclose any grave anti-social behavior upon the part of any of the patients in either group.

If, then, the popular concept of these patients is so mistaken, what is the correct one? From the above study a composite description might run something as follows:

A man in the third or fourth decade; very possibly a foreigner; most probably a single man or one free from compelling family ties and rather given to alcoholic indulgence. The chances are he would be a subsided case of dementia præcox, a recovered or improved alcoholic, a rebellious paretic, or an improved case of "individual reaction" type. Only one time out of 20 would he be feeble-minded and practically never a sexual pervert with criminal tendencies. He may have made prior escapes, but not more than one or two if he is to succeed in remaining out of the institution. Here, as elsewhere, the recidivist is quite hopeless. Often he has tasted liberty in the shape of an unsuccessful prior parole. The chances are about four to one that he will be returned to the hospital in a few days or weeks, and if he remains out we shall find it difficult to discover just how he accomplished it because his relatives are either assisting him or know nothing of his whereabouts.

By the judicious employment of the Social Service Department in the case of non-returned elopers we are at present in closer touch with the situation, and in the future there will undoubtedly be fewer cases whose ultimate destination will remain unknown.

ANHEDONIA.*

By ABRAHAM MYERSON, M. D., Boston, Mass.

Part I.—The Loss of Desire and Satisfaction.

The symptom complex which I am here describing occurs in many mental diseases and in the various forms of the psychoneuroses. It is, therefore, not a disease entity and has the same kind of standing as the symptom complex of epilepsy. Just as there is a type of epilepsy which cannot be traced backward to some cause such as tumor, neurosyphilis, arteriosclerosis, etc., which we, therefore, call idiopathic epilepsy, so there exist cases of anhedonia having no definite relationship to known causes and which seem to present the pictures of a definite disease.

The term anhedonia was first used by Ribot to describe the case of a young girl who suffered from a loss of the pleasure sense in the course of a disorder of the liver. James used the term to describe those sick souls of whom he speaks so eloquently in "The Varieties of Religious Experience," whose trouble lies with a distaste for life and for the things of this world and who find neither motive nor pleasure in existence.

Though I have used the term anhedonia, the symptom complex here described is elaborated so that the distinguished Frenchman might disclaim my right to the use of the term. Briefly, anhedonia seems to be a kind of organic anæsthesia, or is, to put it differently, a dropping out from consciousness of desire and satisfaction based, possibly, on a disappearance of those coenesthetic impulses which are basic in desire and satisfaction. Associated with this anæsthesia and the group of symptoms which develop as a result, is another factor, which I call the disorganized spread of excitement. These two groups of symptoms relating to some condition to me unknown, which remains in the background, occur in varying proportions in the different individuals who are anhedonic and are fundamental

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to the symptom complex of anhedonia. Because they are fundamental, certain preliminary discussions of the nature of desire, satisfaction and excitement are necessary.

However we may regard man and his purposes, we know that some of the fundamental driving forces in his life are the need of food, the need of drink, the need of sex gratification, the need of rest, and the feeling of energy. The need of food is heralded in health by the feeling that we call appetite, and appetite is caused by changes in the gastro-intestinal tract, viscera and probably by changes throughout the entire organism. In the state of health a desire, an appetite, is felt for food, it is taken in, and the appeasement of the desire for food is followed by, or associated with, an indefinable state called satisfaction. That is to say, desire is brought about by some organic changes concerning which we need not go into detail except to state that they are vaso-visceral chemic matters, endocrine and vegetative nervous system changes, and these give rise to a state of consciousness linked up with the need and longing for food. The organism, including in this term intelligence as well as the automatic activities, is spurred into action. The action brings about changes in the vaso-visceral relations through the ingestion of the food, but of all these vaso-visceral relations the individual himself knows nothing. Naively he is interested in nothing but the appetite and the state of satisfaction and comfort that follow ingestion. The human being seeking food is not seeking nutrition except as he becomes a cultured scientific person. *He is spurred on by appetite to the seeking of satisfaction.*[1]

In anhedonia this desire for food either is greatly impaired or disappears. Sometimes the desire is merely fitful and easily lost, and after eating there is none of that pleasurable afterglow called satisfaction. The food itself as ingested lacks flavor and gives no pleasure. It therefore becomes an effort to eat and the pleasures of the table which are so looked forward to by the average individual, and which form the basis of both coarse and refined social life, are lost, and with them much of the pleasure in living. Associated with this loss of pleasure is a displeasure and disgust for food which in extreme form becomes nausea and vomiting. As is well known,

[1] This does not differ materially from the formula of Kempf, which is, however, by no means original with him.

unless food is desired, unless one is hungry, the sight and smell of food are rather disagreeable, and there is thus added to the loss of appetite and pleasure in eating the pain and disgust of being obliged to eat against desire.

What is here but a sketch of the appetite for food is as true of thirst and of sex. Especially in the case of sex activities the racial aims must be carefully separated from the aims of the individual. Whatever that metaphysical entity, the race, has for its purpose, the purpose of the average individual in active sex life is not propagation; that enters as an accessory and specialized purpose. Sex desire is caused by many factors, chief of which are changes in the vaso-visceral chemic relationships of the body. In the male the seminal vesicles become tense, in the female ovulation takes place, menstrual periods appear; in both sexes desire is stirred up by memories or ideas which in turn change vaso-visceral chemic relationships. This crude native stuff of sex desire may become intellectualized, made esthetic and specialized, and brought into harmony and conformity with social purposes, but fundamentally sex desire remains an uneasiness brought about by coenesthetic tensions. This desire then spurs the organism into action to the end that the desire, emotion or feeling be replaced by that loss of desire plus something else called satisfaction. The pleasure in sex as in eating and drinking is largely the disappearance of an uneasiness, though there is an afterglow of the excitement and pleasure experienced during the action itself. This need not last long and may be, in some cases is, immediately replaced by a feeling of disgust which is closely associated with satiety.

The anhedonic patient, when his symptom complex is fully developed, has neither sex desire nor pleasure in the sex act if he still remains potent. Very frequently he is impotent, and this brings about the fear that something serious is happening, because there is widely diffused throughout every community a belief that potency is associated with the essential manhood of the individual, and its loss involves fear that a grave disease is taking place and great humiliation as well.

Just how the desire for sleep arises and what it means to be sleepy I do not attempt to trace in detail here, but refer the reader to the works of Claraparede, Mosso, Boris Sidis and others. Our conception of sleep must be that it is a great restorative procedure,

during which the organism makes up for the damage incurred during the day and prepares for the activities of another day. In man especially there is relief from consciousness itself. The deeper the unconsciousness on the whole the more satisfactory the sleep. The average human being finds 16 hours of consciousness about as great a burden as he can stand, and sleep is a method of escape from the burden of living. In anhedonia the desire and capacity for sleep are critically impaired. Though the patient may be exceedingly and achingly tired, there is lacking that drowsiness at night which prepares one for sleep. Sometimes this sleeplessness is associated with the second group of symptoms later described, to wit, the increased reaction to excitement and the disorganization manifested by the spread of excitement, so that as the patient tries to sleep every noise stirs him into wakefulness, and every discomfort experienced in the posture of the limbs and the body is enhanced into fidgetiness. On the other hand there is sometimes no such restlessness physically, but the patient is conscious of an incapacity to stop thinking, and the events of the day pass through the mind in a restless purposeless manner. Such a patient is at the mercy of every irrelevant association, and sleep becomes impossible because of this uncontrolled mental activity. However, if sleep takes place, as it usually does in some degree or other, then there is no restful feeling as a result. That is, to link up the disorder of sleep with the disorder of appetite and of sex, neither desire for sleep nor the satisfaction of sleep are fully felt, and the patient starts each day with a feeling of fatigue which on the whole is greater than that with which he went to bed.

This brings us to a central symptom in anhedonia and one which in its ramifications is responsible for many of the other symptoms. The feeling of energy is the stock-in-trade of the activities of the human being. Regardless of whether the feeling of energy corresponds to the actual energy capacity of the individual, it is this feeling upon which we estimate our capacities. When the energy feeling is high, due to whatever cause, enterprises are undertaken, effort is made for distant goals, purposes become centralized, and the affairs of life are on the whole made pleasant. Aside therefore from the actual pleasures of gratified desires, one of the largest factors in the feeling of wellbeing is the feeling of energy. In anhedonia the feeling of energy is low so that effort is painful, fatigue following rap-

idly upon exertion and having a peculiar painful component not present in ordinary fatigue. Furthermore, this fatigue is not only physical, but extends to all the purposes of life and to the mental activities. It is difficult for the patient with anhedonia to maintain interest. He finds it hard to concentrate because the capacity to concentrate and to feel interest is to a large extent dependent upon the feeling of energy. Pep, zeal, courage, concentration, interest, and a very large part of pleasure are injured by the injury to the feeling of energy, and the anhedonic patient complains bitterly of these matters. He does not claim to be depressed in the sense that he is sad, *although it is probable that what we call sadness is to a large extent the disappearance of the energy feeling.* In a typical case, however, the depth of depression is not such that the individual definitely calls himself depressed.

Because appetite, thirst, sleep, sex desire, and the energy feeling are impaired; because what has interested the individual in the past lacks interest, and because life itself lacks desire and satisfaction, there arises in many cases a restless cogitation which takes in some the form of the obsession of unreality. The feeling of reality is not intellectual in its origin, it is coenesthetic, it is purposive. Things seem real when we are hungry and food gives us satisfaction, when we are thirsty and drink is a pleasure, when the association of persons of the opposite sex arouses the excitement of desire and when sex relationship brings satisfaction. (In fact, the rebellion against impotence or loss of desire is a rebellion against the threat to reality.) When purposes seem no longer worth while or when we question the validity of our purposes, reality commences to disappear. So in the anhedonic patient whose desires and satisfactions are impaired there commences to appear the internal questioning and scrutiny which finally brings about the feeling of unreality. It is to be remembered that most of the things of life are symbols accepted as realities. When their symbolism disappears their reality disappears. Take, for example, any symbol, the word "woman," for example, and look at it objectively, "w-o-m-a-n" and if one persists a curious feeling of unreality appears, a feeling that this cannot mean anything and the thing for which it stands possibly does not exist. If one looks in the looking-glass to comb his hair or to see if his tie is on straight, there is nothing unreal in the image reflected because there is a purpose in the act, but if one scrutinizes

the image and studies the nose for example, objectively, as a bit of flesh protruding from the rest of a curiously made up mass, then the whole face commences to appear unreal. It then becomes difficult to realize that the face is held to be the symbol of personality and the basis upon which attractiveness and unattractiveness are judged. The anhedonic patient becomes an anxious scrutinizer of himself and others and of his purposes and of the world because the things by which he formerly judged himself and the world are disappearing. And the so-called psychasthenic obsession of doubt in the great majority of cases will be found to have behind it the loss of appetite and sleep, the loss of energy feeling, the loss of sex desire here described as anhedonic.

Part II.—The Increased Reaction to Excitement.

It is here pertinent to discuss the nature of excitement and its meaning in neuropsychiatry.

No matter what happens in the outside world, be it something we see, hear or feel, or experience in any sense-field, there is an internal reverberation in our bodies—excitement. Excitement is the undifferentiated result of stimuli, whether these come from without or from within. A change in the glands of the body heaps up changes within us, which, when felt, become excitement. Thus at the mating period of animals, at the puberty of man, there is a quite evident excitement demonstrated in the conduct of the animal and the adolescent. He who remembers his own adolescence, or who watches the boy or girl of that age, sees the excitement in the readiness to laugh, cry, fight or love that is so striking.

Undoubtedly the mother-stuff of all emotion is the feeling of excitement. Before any emotion reaches its characteristic expression, there is the preparatory tension of excitement. Joy, sorrow, anger, fear, wonder, surprise, etc., have in them as a basis the same consciousness of an internal activity, of a world within us beginning to seethe. Heart, lungs, blood stream, the great viscera and the internal glands, cerebrum and sympathetic nervous system, all participate in this activity, and the outward visage of excitement is always the wide-open eye, the slightly parted lips, the flaring nostrils and the slightly tensed muscles of the whole body. Shouts, cries, the waving of arms and legs, taking the specific direction of

some emotion, make of excitement a fierce discharger of energy, a fact of great importance in the understanding of social and pathological phenomena. On the other hand, excitement may be so intensely internal that it shifts the blood supply too vigorously from the head and the result is a swoon. This is more especially true of the excitement that accompanies sorrow and fear than joy or anger, but even in these emotions it occurs.

There are some very important phases of excitement that have not been given sufficient weight in most of the discussions.

In the very young, as Lotze so well pointed out in the magnificent "Microcosmus," excitement is diffuse and spreads throughout the organism. An infant starts with a jump at a sudden sound and shivers at a bright light. A young child is unrestrained and general in his expression of excitement, no matter what emotional direction that excitement takes. Bring about any tension of expectation in a child—have him wait for your head to appear around the corner as you play peek-a-boo, or delay opening the box of candy, or pretend you are one thing or another—and the excitement of the child is manifested in what is known as eagerness. Attention in children is accompanied by excitement and is wearying as a natural result, since excitement means a physical discharge of energy. A child laughs all over and weeps with his entire body; his anger involves every muscle of his body and his fear is an explosion. The young organism cannot inhibit excitement.

As life goes on, the capacity for localizing or limiting excitement increases. We become better organized, and the *disrupting force* of a stimulus becomes less. Attention becomes less painful, less tense, *i. e.*, there is less general muscular and emotional reaction. Expectation is less a physical matter—perhaps because we have been so often disappointed—and is more cerebral and the emotions are more reflective and introspective in their expression and less a physical outburst. Indeed, the process often enough goes too far, and we long for the excitement of anticipation and realization. We do not start at a noise, and though a great crowd will "stir our blood" (excitement popularly phrased and accurately), we still limit that excitement so that though we cheer or shout there is a core of us that is quiet.

Seeking excitement becomes one of the great pleasure-trends of life. In moderation, tension, expectation and the diffuse bodily

reactions are agreeable; there is a feeling of vigor, the attention is drawn from one's self and there is a feeling of being alive that is pleasurable. The tension must not be too long sustained, nor the bodily reaction too intense; relaxation and lowered attention must relieve the excitement from time to time; but with these kept in mind, it is true that Man is a seeker of excitement.

This is a factor neglected in the study of great social phenomena. The growth of cities is not only a result of the economic forces of the time; it is made permanent by the fact that the cities are exciting. The multiplicity and variety of the stimuli of a city—social, sexual, its stir and bustle—make it difficult for those once habituated ever to tolerate the quiet of the country. Excitement follows the great law of stimulation; to evoke the same internal effect, the same feeling, requires a greater and greater stimulus, as well as new stimuli. So, the cities grow larger, increase their modes of excitement and the dweller in the city, unless fortified by a steady purpose, becomes a desperate seeker of excitement.

If the seeking of excitement, as such, is one of the prime pleasures of life, organized excitement in the form of interest is the directing and guiding principle of activity. At the outset of life interest is in the main involuntary and is aroused by the sights, sounds and happenings of the outer world. As times goes on, as the organism develops, as memories of past experiences become active, as peculiarities of personality develop, and as instincts reach activity, interest commences to take definite direction, to become canalized, so to speak. In fact, the development of interest is from the diffuse involuntary form of early childhood to a specialization, a condensation into definite voluntary channels. This development goes on unevenly, and is a very variable feature in the lives of all of us. Great ability expresses itself in a sustained interest; a narrow character is one with over-deformed, too narrow interest; failure is often the retention of the childish character of diffuse, involuntary interest. And the capacity to sustain interest depends not only on the special strength of the various abilities of the individual, but remarkably on his energy and health. Sustained "voluntary interest" is far more fatiguing than involuntary interest, and where fatigue is already present it becomes difficult and perhaps impossible. Thus after much work, whether physical or mental, during and after illness—especially in influenza, in neurasthenic states gen-

erally, or where there is an inner conflict—interest in its adult form is at a low ebb.

In anhedonia *excitement of any kind tends to become painful,* and to become disorganized. Control of excitement becomes difficult. What formerly was pleasurable excitement, such as the tension of the theater or the stir and bustle of a crowd, the stimulation arising from friendly gatherings, parties and crowds, become unpleasant, painful, and is attended by a restlessness and incapacity to sit still or to maintain concentrated interest, which finally makes the unfortunate patient shun theaters, movies and concerts, avoid his friends, avoid crowds, etc. This stage may be preceded by a period in which the patient seeks excitement in order to see if he cannot find pleasure, but he finds not only no pleasure, but positive displeasure, and finally becomes seclusive. There are no delusions connected with the seclusiveness, though there may be a mild feeling of inferiority. Routinely, the patient will state that noises almost make him sick, that he gets worked up beyond endurance if he has to sit still in a concert or theater, that he becomes confused in a crowd, apparently because the stimuli that come in cannot be attended to in a regular, orderly fashion and because there is a diffuse excitement as a result.[2] Here is an important phase of the anhedonic reaction; the competing stimuli *make choice difficult* and the patient with anhedonia finds it difficult to make up his mind what to do in any given situation, in part at least because of his confused and excited feeling.

Part III.—Causes of Anhedonia.

We have here a symptom complex in which certain of the basic desires of the organism and certain of the great pleasure trends of life disappear or are impaired. Food, rest, sex are of extraordinary importance to the individual. The energy feeling is the keystone of purpose and will. The limitation of excitement and the orderly reaction to stimuli are fundamental in their value to the individual.

[2] Very frequently what the patient calls dizziness is a confusion and disorganized excitement resulting from the non-localization of stimuli. In other words, the anhedonic patient is assailed by stimuli in a non-selective way and his reaction is the same feeling we have when overwhelmed by rapidly moving visual stimuli.

Under what situations does their impairment or disorder appear; in other words, under what circumstances does this symptom complex tend to appear?

I should say that first of all it occurs in acute form as an accompaniment of many of the infectious diseases. Here, however, the situation is masked because of the general sickness of the patient, and we are dealing with a toxic state in which the accessories of life such as the desire for food, sex feeling, etc., disappear because there is no real need for them. We shall, therefore, neglect this situation and speak of those situations where the anhedonic response is without any definite acute illness, and is itself the main and important feature.

1. It is seen in its most exquisite form after an acute infection, typically influenza. Here we commonly speak of it as neurasthenia, and I am not attempting to separate it from that disease complex; perhaps I am merely describing neurasthenia in a different way. Frequently after influenza or other acute infections there gradually develop a loss of appetite and loss of sleep, a lowered energy feeling, a loss of desire and satisfaction in everything in life, feelings of unreality, and the increased reaction to excitement which I have made cardinal in anhedonia. Something has happened to the organism as a result of which desire and satisfaction are injured, energy goes and restlessness supervenes. The condition may be short in duration or long, and may resist all efforts at treatment.

Of importance in my mind in the development of this type of post-infectious anhedonia is the fact that our ideas of therapy have swung from excessive medication in the treatment of every symptom as if it were a disease and had specific remedies, to no treatment whatever. Under the influence of the fallacy that self-limited diseases need no treatment, we allow the patient who is sleepless to go without sleep for an indefinite length of time without making efforts to overcome his insomnia. For example, in the influenza epidemic of 1918 insomnia was a common accompaniment of the disease. Patients suffering from a mild infection would lie awake night after night tense with fear that they would die, and so formed a habit of sleeplessness that persisted after recovery, and which in my opinion was an important factor in bringing about the anhedonic syndrome. There would have been no harm whatever in giving these patients some veronal or bromides, or some sedatives, in order

to insure a good night's rest. As it is, the habit of sleeplessness was formed when it might have been prevented.

2. Similar to the type of anhedonia which follows infections is the type following surgical operations and pregnancy. The surgeon of today is too anxious to get his patient up on his feet in record-breaking time. He seems to feel a personal glory in stating that his appendectomies are ambulatory at the end of a week; that brings up his batting average as a surgeon, but it increases the amount of neurasthenia and anhedonia found later.

The nursing period in certain types of women acts to bring about typical cases of anhedonia. Just why the savor and zest of life should disappear under such circumstances is not often easy to determine, for it occurs sometimes in women who seem to have abundant milk and who formerly were sturdy and strong. Perhaps some psychological factors such as the wish to give up nursing plays a part and perhaps the disturbed sleep is important. At any rate it seems common in the young nursing mother of today.

3. The menopause in women and the involution period in general in the male, the senium, are prolific breeders of anhedonia. A man or woman who has been strong and energetic up until the time of the change of life suddenly finds that the vital appetites have disappeared and that he takes no pleasure in anything. Sometimes this condition is preliminary to a true melancholia, but often it persists without an active depression. In middle-aged men it is especially found with the sudden loss of sex power and a harassing realization that old age has arrived. Sometimes it is associated with the feeling that success can never come. It is most marked in those who have been exceptionally vigorous and powerful, and have passed very quickly either into middle life or into old age. The most persistent case I have seen and the most typical was in a woman at the menopause, and in her case the condition lasted continuously for years.

4. As a reaction to circumstances one sees a very important type of anhedonia. Thus a man whose purposes have become centralized so that his interests all lie in one field may become deeply anhedonic when that purpose is hopelessly blocked. A man intent on promotion from one job to another finds his organic and social appetites and pleasures disappear when the desired job is given

somebody else. A man or woman wrapped in some other person, the mate, a son or daughter, is robbed by death of the one in whom purposes and affections center, and one sees a deep anhedonia.

In regard to this group of cases one finds that frequently after the emotional distress has passed the habit of sleeplessness and the habit of anorexia may continue the anhedonia. This is a point which I wish to emphasize as of great importance, viz.: a person may suffer mentally as the result of some adequate cause and that mental suffering is indissolubly associated with sleeplessness, loss of appetite, loss of energy feeling, loss of sex desire, etc.; then the emotional cause ceases to operate, but the condition persists through the habit inertia of the organism. Therapeutics must then be directed vigorously towards breaking up of the pathological habits.

5. The most characteristic cases of anhedonia are seen as preliminary and early stages of mental diseases. Thus in manic depressive insanity the depressed phase may be ushered in by a long period where the symptoms described are characteristic and are often called neurasthenic. In dementia præcox this is commonly seen. Long before there is true apathy the patient who will later become demented suffers acutely because he feels this change in himself, this loss of desire and satisfaction together with a restless reaction to stimuli. In these cases of dementia præcox the unreality feeling is extremely prominent.

6. There is a type of recurrent mental disease which might well be called *idiopathic anhedonia,* where there is no development of symptoms going on to those of manic depressive or dementia præcox, where there is no history of preceding illness and where there exists none of the ordinary causes for the syndrome. This type of anhedonia develops slowly as a rule and the patient presents the characteristic symptoms of lost desire and satisfaction, together with restlessness and a torturing introspective life in which the unreality feeling is a chief component. The symptoms gradually grow worse, but they never reach a depression in the sense that the patient is self-accusatory, retarded, or for that matter suffers from what might be called sorrow in any of its forms. His depression, if any exists at all, arises from the fact that he no longer can feel pleasure. This mental state may persist for weeks, even months, and then gradually goes away and the patient gets well just as in a

manic depressive attack, and then later without any adequate cause there again develops the syndrome. There never occurs anything like an excited phase. This type of recurrent anhedonia deserves, in my opinion, a separate place amongst psychiatric entities and is far more common than true manic depressive insanity.

7. Finally, it must be stated there are types of people who are anhedonic by nature. Human beings are widely variable in all their capacities and interests. In intelligence, the range is from the idiot to the genius, in manual skill from the one whose fingers are all thumbs to the one who can shape resistant metal, wood and stone into things of serviceability, ingenuity and beauty. In emotions people range from those, *e. g.*, whose prevailing emotional state is fear to those who may be said to be fearless. We may easily divide up mankind into the hearty types whose appetites are vigorous and whose sense of satisfaction is robust to those whose appetites are, on the whole, evanescent and finicky, and whose satisfactions are easily turned to dissatisfaction and unsatisfaction. Unquestionably our culture and the whole of the process of our civilization tends to refine our tastes, which merely serves to lessen the heartiness of appetite and desire and to make more difficult satisfaction. When people ate with their fingers there was little that could disgust any man in table manners. When people require a dozen implements with as many changes of dishes for their calories, a slip up in the service rendered may take away the appetite. However this may be in regard to civilization, there remains no doubt that in no factors of development are people more variable than in the factors of desire and satisfaction. Of two children lying side by side in the crib, the one will cry vigorously for his food and smack his lips with gusto while eating it. The other has to be coaxed into appetite and apparently receives no pleasure from his food. The same will be true of the zeal with which these children play with their toys and their apparent happiness in so doing. The hearty folk pass through life eating of the good things of life by mouthfuls while the anhedonic nibble and are constantly on the verge of disgust and dissatisfaction.

The anhedonic type of individual is introspective by nature, continually examining his own emotions and his own bodily states. He becomes as a result easily bored and pessimistic. Usually of low

energy, he is often not capable of sustained effort and through failure the vicious circle is maintained and intensified. Let an accident or a disease supervene and the anhedonia becomes more or less organized into a syndrome. For it is characteristic of the anhedonic patient easily to lose his appetite and his reaction to fatigue takes on two particularly important directions; first, he becomes restless, that is, unable to rest, and thus prolongs his fatigue, and second, sleep disappears. One might divide people into two groups in their sleep potentialities, the first who after fatigue and exertion sleep well and the other who react to the same situation by sleeplessness. The capacity to sleep well is one of the assets of success in life.[3]

I am firmly of the belief that the heaping up of needs and desires which is one of the chief processes at work in civilization breeds anhedonia. Furthermore, as excitement becomes a commonplace, as cities grow larger the effort to find satisfying excitement becomes a frantic pursuit and in many cases results in that disorganized reaction to excitement and that lack of satisfaction in all excitement which are central factors in anhedonia.

Part IV.—Therapeutics.

It is obvious that the therapeutics of such a condition will depend on many things, chief of which will be, first, the relationship of the syndrome to other mental conditions in the patient such as the possibility of early manic depressive or dementia præcox; second, the cause, whether definitely related to some physical disturbance such as sickness, menopause, etc., or to some so-called psychical disturbance such as the blocking of an aim or a bitter loss, deprivation, humiliation, etc.; third, the original temperament of the patient, and fourth, the nature of the symptoms presented.

[3] Dr. Charles W. Eliot in a recent review laid especial emphasis upon the value to him throughout his busy and successful career of the capacity to sleep well. He says that he falls asleep as soon as his head touches the pillow, and that no matter what the stress and strain of his existence he was restored by a night's rest. Thus neurologists and psychiatrists who tell a patient it is of little importance whether he sleeps or not as long as he rests, apparently have never had the torture of one night of insomnia. Sleeplessness constitutes a major disability and must be given urgent attention since upon its continuance there arises a chain of symptoms of distressing nature.

I must confess that I pretend to make no psychoanalysis, in the Freudian sense, of my patients, and I shall be iconoclastic and crude enough to say that no matter whether there be a psychical starting point or not in such a syndrome as this, the main thing to treat, at least at first, is the organic condition of the patient, meaning by that his appetite, his sleep, his feeling of energy and his restlessness. In the first place, the separation into psychical and physical is totally artificial in so far as physicians are concerned. We have no more reason to separate sharply the influence of the environment as its events stream in through our eyes and our ears, and through the bodily contacts of our skin, from those that are imbibed through the gastro-intestinal tract. In other words, the things that result when we hear or see something are organic, as organic as the events which transpire when we eat, drink, or take drugs. Furthermore, even if the individual is depressed or anhedonic because of an unhappy love affair or a serious inferiority situation or some complex arising through the social, economic, psychological state in which he happens to be, you can change his attitude toward these circumstances by physical means just as surely as you can change his digestion by distressing thought. Still more important, habit-formation plays so prominent a part in all mental symptoms and in all such disorders as loss of appetite or loss of sleep, that the technique of therapy must be to break up these habits as rapidly and as energetically as possible, and to do this psychical re-education and readjustment are not nearly as effective as drugs and physical therapeutics. *In other words, drugs and physical therapeutics are just as much psychic agents as good advice and analysis* and must be used together with these latter agents of cure.

In the presence of one of these patients, in addition to finding the etiological background, the physician must ask himself the following questions: "How can I bring about a return of appetite?" for if the physician can bring about the joy of eating he gives the patient a grip on life and living of fundamental importance; second, he must ask, "How can I bring about sleep?" for sleeplessness acts to continue fatigue and through fatigue the other symptoms can easily arise or be perpetuated; third, he must ask himself, "What technique shall I use to restore the energy feeling?" for, as has been stated, back of will and purpose and back in

the last analysis of pleasure and hope is the energy feeling, and fourth, he must ask, " What steps shall be taken to prevent the disorganized excitement? "

In answer to the first question, " How can I bring about appetite? " the reliance must be on re-education, on a graduated system of exercise with out-door living, together with a bitter tonic before meals. I make bold to say that the last is not the least of the methods to be used. Massage and hydrotherapy of a stimulating kind are of value in this regard. Food prepared in a tempting way is important. Change of scene has its place in all psychotherapy.

" How can I bring about sleep? " is answered that first of all the habit of sleeplessness must be broken up, as I have emphasized before, and for this there is no alternative to hydrotherapy and drugs. I use routinely a combination of sodium veronal and sodium bromide, and if this does not work, although it usually does, I utilize other things such as chloral, etc. For physiological therapeutics a quiet place to sleep, hot drinks and hot baths, or a walk perhaps before retiring are of value; on the whole, the avoidance of excitement in any form whatsoever must be enjoined on the patient.

" How bring about the energy feeling? " Hydrotherapeutics and massage are of prime importance. *A resolving of the individual psychological problem,* if there is such an individual problem, and the adoption of a philosophic attitude must of course be brought about. The care of the person as a whole, meaning his nutrition, his exercise, his relationship to other people, his relationship to the social milieu—all these are energy factors of great importance.

The worst type of lost energy feeling is found in former athletes. They become provoked at themselves for their " has been-ness "; they become fiercely self-critical and even self-hostile; they attempt too much and try themselves out too often. I tell them that they must start a system of conditioning beginning with a very small amount of exercise and gradually increasing until they are back, or nearly back, to where they were. The gradual exercise method is, in my opinion, the prime method for restoring energy feeling, but in addition I do not hesitate to use tincture of nux vomica and caffein especially in the morning, for it is in the morning that the majority of these individuals find themselves apathetic and anhedonic. Towards night they pick up and become so restless that they

cannot sleep, so that in many cases I have found it valuable to give nux vomica and caffein in the morning and at luncheon; and after supper and before bedtime to give bromides, in this way re-establishing the normal cycle of energy feeling.

The prevention of disorganized excitement when it occurs must be through quiet, through a resolution of the individual psychological problem, if necessary through bromides and sedatives. By the gradual increase of stimulation the patient is trained back to normality.

In emphasizing the physical and drug therapeutics of the situation I am by no means minimizing the value of psychological analysis, advice, of encouragement, and of establishing a philosophy of endurance and hope. I do not believe, and this I say despite the hold that the analytic methods have upon our present-day neuropsychiatry, that an extended analysis of the individual's difficulty helps him in the majority of instances. Having lived and worked with psychoanalysts, I have failed to see that their claims are warranted by their results. I believe that mental wounds heal just as physical wounds do, and to keep probing them, and about them, is as rational in psychiatric therapeutics as continued probing would be in surgical therapeutics. To restore sleep and appetite, to bring back to the patient some of his energy feeling, is to give him the start towards adjusting his own difficulties, towards a successful "forgetting" of them. When he has the pleasure of food, the rest of sleep, and the courage and hope that come from restored energy, he may still need a philosophy of life and an adjustment of his own peculiar difficulties, but in the majority of cases he will then be able to do this for himself better than any psychiatrist can do it for him.

Notes and Comment.

HOSPITAL PERSONNEL.—Where superintendents of state hospitals are gathered together, there the topic of personnel is sure to be discussed and frequently in a rather pessimistic tone.

Why is it that the state hospital superintendent finds it difficult to draw into his service in adequate numbers physicians of the caliber desired? There are many causes, apart from Freudian mechanisms, which determine the choice of a career, and at different periods different specialties have varying fortunes. New developments in scientific method or in therapeutic activity raise new enthusiasms. Some specialties have a more or less permanent vogue. The attraction may be intrinsic, due to the special fascination of the study, or extrinsic due to incidental considerations, such as social prestige or financial remuneration. It must be admitted that psychiatry in the past has been handicapped both in relation to intrinsic and extrinsic attractions. The psychiatry of the medical schools was a rather arid discipline, bristling with forbidding names. It led to a career which seemed to shut one off from the usual joyous companionships of life. It is not to be wondered at that there was no great enthusiasm shown by recent graduates for an internship in a hospital for the insane.

In both respects, however, the situation is somewhat changed. The psychiatrist to-day, with good teaching facilities, is in a position to bring before the student the full fascination of a discipline in medicine which touches intimately many of the main issues of life. As a matter of fact the student responds to this presentation with a most encouraging degree of interest, although of those most interested few choose it as their life career. Here the extrinsic considerations come into play. In considering his future career in the other disciplines the student see himself engaged in interesting research, broadening out his contact with a vocally grateful clientèle, enjoying prestige, making money, mixing freely and on equal terms with his colleagues in hospital work and in social

life. When he considers psychiatry he seems to see the clientèle either already segregated in forbidding institutions or consulting him almost by stealth, never introducing into their table-talk grateful references to their psychiatrist. He sees in the usual hospitals for mental disorders not the bright atmosphere of the average general hospital with its almost coquettish appeal and cheerful suggestion of busy activity, but a more somber and forbidding environment. When he looks forward to promotion in his career, he sees his medical work becoming more and more limited, while extramedical or administrative work takes up increasingly more time.

If the reward of good service in surgery, pediatrics, or internal medicine were to be the rapid promotion to the superintendentship of a hospital with contact with the surgical, pediatric and medical problems of diagnosis, treatment and research reduced to a minimum, while administrative, economic and domestic affairs became matters of insistent attention, what hope for surgery, pediatrics and internal medicine?

As far as the discipline of psychiatry is concerned a new order is being established. Psychiatric clinics, psychopathic wards in general hospitals, consultant positions in relation to schools and courts offer a career parallel to that in the other branches of medicine. One welcomes on the one hand signs that the general practitioner of the new school is not like his predecessor, complacently ignorant of psychiatry, but realizes the important contribution which the psychiatric specialist can make, and on the other hand the fact that there are progressively more openings for the specialist in psychiatry.

While the new dispensation draws more men into psychiatry it leaves the problem of the state hospitals untouched; it may even complicate their problem. The new recruits to psychiatry, imbued with new standards and ideals, may be less content than ever to accept the conditions which have been associated in the past with the state hospital service.

Here there is an opportunity for some administrative genius who will organize in his state facilities for psychiatric treatment on as efficient a technical basis as the facilities for medical and surgical treatment, and draw into the specialty of psychiatry the quota of medical men to which it is entitled.

It is not a question of money, to be solved merely on the basis of salary schedules; as a matter of fact the hospital physician, with his income in addition to full maintenance for himself and his family, is in an enviable economic position compared with the majority of his extra-mural colleagues, subject to the uncertainties of the market-place.

If it is not a question of money, then it is a question of conditions of life and of scientific work. With the vast aggregations of patients in large state hospitals, problems of the study, diagnosis and treatment of individual patients compete for attention with problems of administration and domestic economy. The more chance there is of the psychiatrist in the state hospital continuing, as years go on, to have good opportunities to carry on his special medical work unhampered by non-medical duties, the more chance is there of the state hospital attracting the budding psychiatrist. How far that can be done in view of the huge aggregations of patients in many state hospitals is perhaps not easy to say. But is there any good medical ground for such accumulations of patients, and is not their only justification economic necessity?

With more but smaller hospitals disseminated throughout the state, with active out-patient departments making early consultation on mental disorders as accessible as in regard to bodily ailments, with the community educated to take advantage of early facilities and to be tolerant of the convalescent or the mentally crippled, perhaps the mental health of the community might be supervised with no greater expense than under the present system of huge hospitals.

The more closely the mental hospital approaches in its medical standards the general hospital the more attraction will it have for the young graduate; and the more closely the conditions of life approach the conditions of life of the internist and surgeon the more likely will the psychiatrist be to affiliate himself with a state hospital. The visiting physician of a general hospital makes a very valuable contribution to its work, but he lives his life apart from the hospital, and has many outside interests, medical and social. The more opportunity there is for the state hospital physician to live under analogous conditions, to have close medical and social contacts with the general community, the more desirable will such positions appear. Freedom from undue administrative cares,

opportunity for work on individual patients and not merely for the superficial supervision of masses, life in the community not confined to the hospital limits, are factors desired by the young psychiatrist and are perhaps attainable. The administrator who establishes a system on such principles may introduce a new era in the treatment of mental disorders. C. M. C.

THE SEVENTY-EIGHTH ANNUAL MEETING OF THE AMERICAN PSYCHIATRIC ASSOCIATION.—The annual meeting of the Association, held in Quebec, Canada, in June, was well attended, nearly two hundred fellows and members having registered, in addition to a large contingent of visitors and guests.

The program was one which insured sustained interest throughout the different sessions, and presented a sufficiently varied material for discussion. The arrangements for the comfort and entertainment of those in attendance left nothing to be desired. Dr. Barrett, the President, in his address, for which he took as his subject, "The Broadened Interests of Psychiatry," fully met the expectations of his fellow members and so conducted the various sessions as to provide for carrying out practically the whole program. The annual address by Professor Cannon of the Harvard Medical School was upon the results of further studies in a physiological field in which he has already attained a well-established and international reputation. Both of these addresses appear in the present issue of the JOURNAL. But two or three papers were read by title. A few who had been given a place on the program were not heard from in any manner. They had, for some reason, ignored the rule of the Association that when not able to be present at a meeting, authors of papers to insure publication must place them in the hands of the Secretary to be read in full or by title as the Association might determine, in the absence of the author.

The Council authorized the President, with the approval of the Association, to appoint two standing committees each with important duties. These are the Committees on Ethics and on Policy. In the early days of the Association its ethical standards were high and, with practically no deviation from the standards established by the founders, this condition has continued until now. Changing attitudes in professional circles toward methods which a few years ago were considered unethical, a growing interest on the

part of the public in medical matters and a tendency on the part of the lay press to discuss subjects which a short time ago were only treated in professional journals, have resulted in a state of affairs wherein it appeared advisable that a standing committee should be appointed empowered to deal with alleged violations of those ethical principles which should, and have, we believe, with rare exceptions, governed the members of the organization.

From time to time during its early history the Association formulated certain "propositions" relating to the care of the insane, the construction and organization of hospitals and the policy which should govern states and communities concerning these and cognate subjects. These "propositions" were of much help, coming as they did from the only organized body of physicians expert in such matters in the country, in the early struggles to establish standards of care and treatment for the mentally disordered and to arouse states and communities to a sense of their duty in the premises. In time they became obsolete, but there still remains a duty before the Association and a work which it can accomplish better than any other organization, because of the fact that its membership is country-wide and because that membership is composed of physicians of large and varied experience in all matters pertaining to mental disorders.

That duty is to guide the general profession, the public, the lawmakers and courts and to establish certain formulations of policy, elastic in nature, but of such a character that they may be available in the solution of every-day problems which confront not only the laity but the profession.

We have long felt that the Association, the oldest and largest special medical organization in the country, had been remiss in not making the force and influence, which it undoubtedly possesses, more often felt in the guidance of public policy in matters psychiatric, in questions relating to the mental health and stability of the nation. Through a committee such as has been authorized and probably through other means which will suggest themselves, the forces for good in the Association can be directed in proper channels to the manifest good of many and to the wider usefulness of the organization.

Among the several papers read and discussed, probably the greatest interest centered about those of Drs. Kopeloff and Cheney

and Dr. Cotton. Doctors Kopeloff and Cheney, as a result of a series of studies at the Manhattan State Hospital, Wards Island, New York, could find no ground of agreement with Dr. Cotton as to the rôle of focal infections in the etiology of mental disorders. Doctor Cotton, on the other hand, reiterated the view and again related the results claimed for his methods, with which the members of the Association were already familiar, largely, however, through the lay press, and made the somewhat startling assertion that the recovery rate at the Trenton State Hospital, where he has been treating patients for the past four years or more upon the theory that their psychoses were due to focal infections, was 85 per cent, with a period of hospital residence about half as long as was the rule at the hospital prior to the inception of the methods now followed.

It is no reflection upon the character of Dr. Cotton's paper to say that it was apparent that a considerable degree of the interest which was manifested grew out of a curiosity on the part of many as to any explanation which Dr. Cotton might make concerning the rather remarkable, and in the minds of many, unethical, exploitation of the methods and results claimed at Trenton in a lay periodical; an exploitation made moreover by a layman, Mr. Burdette G. Lewis, and in such a manner as to minimize the value of the work of Dr. Cotton's fellow members and to discredit appeals which are being constantly made for means to relieve the overcrowded condition of many public hospitals for mental disorders, upon the theory that if the methods in vogue at Trenton were followed, such appeals would be unnecessary.

The New Jersey Boswell shows a perhaps pardonable predilection for what is done in the state of his residence but an unfortunate ignorance of what is being done elsewhere, coupled with a tendency to exaggerate conditions which exist, in order, apparently, to make his own statements more convincing by contrast.

Some two or three years ago, the same gentleman, by invitation, read a paper before the Association in which he criticized the business methods pursued in most hospitals and the business ability of most hospital superintendents, then holding up New Jersey business methods as the ones to emulate. He now appears as the author of an article dealing with a purely medical subject and one still *sub judice* and again takes occasion to invite those who, he believes,

sit in the outer darkness of prejudice or conservatism to come into the light, which from his point of view shines alone from Trenton.

One wonders if he had read before the publication of his paper the following taken from Dr. Meyer's introduction to Dr. Cotton's recent book:

> To the lay reader I should give warning not to sit in judgment over the physician who is conservative and not to run at once to the man who promises marvels.

One is inclined, moreover, to suggest to the author that he take to heart a story dating back before the beginning of the Christian Era. A shoemaker criticising from a workman's standpoint, the sandal on the foot of a figure in a painting by Apelles, was so elated at the favorable reception of the criticism on the part of the artist, that he began to make further criticism, this time from an artistic standpoint, at which the artist exclaimed, "*Ne supra crepidam sutor judicaret.*"

The value of Dr. Cotton's work, the soundness of his conclusions cannot be measured or discussed, with any good either to the public or the profession in lay journals or the daily press. No one, least of all, none of Dr. Cotton's associates, desires to place a straw in the way of the general acceptance of the theories which have emanated from Trenton, if they stand the test of critical examination and analysis, or assume anything but an open minded attitude toward the methods pursued and the results claimed to have followed these methods at Trenton. In the words of Dr. Copp of Philadelphia, "let the work go on"—let it, however, be conducted with scientific exactness of detail, and in such a way that all working in similar fields can follow not only the methods pursued, but the results obtained.

The words of Pasteur spoken at the opening of the institute named in his honor may well be taken to heart by all who bring before the scientific world new discoveries or new applications of accepted methods. He said:

> For the investigator, it is the hardest ordeal which he can be asked to face—to believe that he has discovered a great scientific truth, to be possessed with a feverish desire to make it known, and yet to impose silence upon himself for days, for weeks, sometimes for years, whilst striving to destroy those very conclusions and only permitting himself to proclaim his discovery when all the adverse hypotheses have been exhausted.

Association and Hospital Notes and News.

DEDICATION OF TWO NEW PSYCHOPATHIC BUILDINGS AT THE TRENTON STATE HOSPITAL, TRENTON, N. J.—Two new buildings named in honor of Dorothea Dix and Stewart Paton were dedicated with appropriate ceremonies at the Trenton State Hospital, N. J., October 21, 1921.

The following program was arranged and carried out in part:

Greeting. A . D. Forst, President of the Board of Managers.

Invocation. Presentation of key of the psychopathic building to the Board of Managers by Ogden Hammond, President of the State Board of Institutions and Agencies.

Presentation of key of the psychopathic building to the medical director by A. D. Forst, President of the Board of Managers.

Dedication of buildings—unveiling the tablets—Ogden Hammond.

Address. Hubert Work, M. D., President of the American Medical Association.

Address. Albert M. Barrett, M. D., President of The American Psychiatric Association.

Address. Dwight Morrow, member of the State Board of Institutions and Agencies, "Institutional Construction Program."

Address. W. Irving Glover, 3d Assistant Postmaster General, former Speaker of the House of Assembly, N. J. Legislature. "Imperative Needs of State Institutions."

Address. Henry B. Costill, M. D., President of the State Medical Society, "Cooperation of State Medical Society in Institutional Work."

Address. Stewart Paton, M. D., former member of the Board of Managers.

Benediction.

The Greeting which was to be extended by Mr. A. D. Forst, President of the Board of Managers, was given by Dr. Henry A. Cotton, Medical Director, who spoke in part as follows:

Ladies and Gentlemen: On behalf of the Board of Managers of the New Jersey State Hospital at Trenton, I take great pleasure in welcoming you to the dedication exercises of our two new psychopathic buildings named in honor of Dorothea Dix and Stewart Paton. The erection of these buildings marks a decided departure from the usual type of construction of state hospitals and it is fitting that the State Hospital at Trenton should

lead the way in this particular field. This hospital enjoys the distinction of being one of the first state institutions established on a scale which has marked similar hospitals throughout the country since then.

It was entirely through the efforts of Dorothea Dix, that great philanthropist, who after much painstaking work in the jails and almshouses, accumulated sufficient data to memorialize the legislature in this state for an appropriation, succeeded in obtaining $60,000 for the erection of the present main building, which was ready for occupancy in 1848. Her interest never lagged and what she succeeded in doing in New Jersey was duplicated in twenty-two other states. She considered this hospital as her first-born and in her declining years lived at the hospital as a guest of the Board of Managers until her death, July 17, 1887.

Dr. Charles H. Nichols, her life-long friend, apprising her English friends of her death in a letter to Dr. D. Hack Tuke, closed with this fitting tribute: "Thus has died and been laid to rest in a most quiet, unostentatious way the most useful and distinguished woman America has yet produced."

On the establishment of large state insane asylums, while there was a marked improvement in the treatment of the insane, there were still many disadvantages. In spite of the fact that many asylums have changed their names to hospitals there was little resemblance to hospital treatment in the majority of institutions. The traditional fear of the insane was the cause of the generalized use of mechanical restraint and very little attention was paid to the medical needs of the patients. With a realization that the truly medical side of the problem should be emphasized, these new psychopathic buildings were conceived and constructed with the result that we occupy the unique position to-day of having connected with the State Hospital a general hospital both in point of construction and organization. The three operating rooms are run on the same principle as operating services in general hospitals. The surgical wards will compare favorably with any other hospital, and by means of segregation these patients can be more conveniently treated than ever before. Many of the patients are admitted to the psychopathic wards and do not have occasion to see the old wards during their residence here.

We would emphasize the fact that while there have been psychopathic hospitals erected in other institutions they do not fulfill the requirements of a general hospital service such as we are fortunate enough to have here.

It might be well to add that our organization is also very broad and includes specialists in other lines who can benefit our patients by their expert knowledge. This would include the laryngologist, gynecologist, gastroenterologist, genito-urinary surgeon, and of course the dentist and roentgenologist, so that now it is possible to conduct an accurate and systematic survey of every patient admitted. As an adjunct to the work we have a well equipped clinical and pathological laboratory.

We sincerely hope our efforts toward a proper diagnosis and treatment of the psychoses have not been in vain and that with the erection of these buildings we will point the way to other institutions to a realization of the

necessity for psychopathic wards connected with other state hospitals in the country.

At the conclusion of Dr. Cotton's remarks Dr. Hubert Work, President of the American Medical Association and an ex-president of The American Psychiatric Association, was introduced.

Dr. Work said:

It affords me the greatest pleasure, personally, and the American Medical Association is complimented by your invitation to have some one represent it on this dignified occasion.

Medicine has been so amplified in recent years and has become so comprehensive in its application that we no longer think of drugs first and other agencies afterward, or not at all. The patient's immediate safety and well-being became our first concern and the evolution of the hospital followed to supply this demand. When mental derangement was finally recognized as a symptom it instantly gathered to it all that was known in medicine coupled with the additional necessity for hospitals with scientific equipment.

The treatment of the psychoses is surrounded by medical science and not set apart from any part of it. We no longer mistake the shadow for the substance; treat symptoms only and wait for nature to relieve their cause.

* * *

Insanity, once called lunacy because of the supposed influence of the moon, has waited long for an adequate definition, certainly since the time of the great Blackstone, who said of it: "I have searched all authorities and my own mind for a definition of insanity. I do not believe it is possible to frame one."

Physicians, however, realizing that it was an abnormal state, set up negatively that it was the opposite of sanity, which then compelled that sanity be defined. It was found that the term "sanity" was not applicable to all in mental health, without qualification, because mentality is as varied as are human faces.

* * *

However, a working definition of sanity has been agreed upon, the test of which is the "ability of an individual to adapt himself to his environment" qualified by collateral considerations as age, sex, race and education.

An individual then, unable to qualify by these tokens is regarded as insane and falling under one of the many sub-heads in evolving which our brightest psychiatrists have indulged themselves for many years past.

* * *

The question asked centuries ago, "Who can minister to a mind diseased or pluck from the heart a hidden sorrow?" is being answered every day by psychiatrists. They are doing it out of sight, without public advertisement, but there is no pleasure so keen or human reward comparable to watching the tired, deranged, melancholy mind of a mother

rearranging itself, the stealthy return of lost hope and eventually her re-establishment in the home, her children's gateway to heaven.

A state's largest single appropriation is for those of incomplete, obscured, or waning mentality. They constitute the by-product of humanity for which there is no economic use, yet cannot be cast aside or left unprotected. Theirs is a legacy or an inheritance of disease or of traumatism which they cannot unaided support and we who are strong must bear their burdens. During this period of world readjustment we often hear expressions of hopelessness and distrust of humanity and its motives. These come from those of us who have grown older and are unable or unwilling to readjust to a new order of things, but hope rather for the return of the old, which will never return.

* * *

Great institutions, like this one we have met to dedicate to the cause of human sympathy and consecrate to the coordination of the aberrant soul with its human body, to protecting the tenement, its tenant having fled, disprove the arguments of the materialist and shame the selfish.

Maybe this is sentimental. Perhaps the soul of man is only a sentiment. Possibly the conception and development of this and similar great institutions had emotional birth. If so, sentiment shall save a people, for " As a man thinketh in his heart so is he."

The founder of the greatest clinic known to medical history, organized in one of our western, states recently said: " I have always claimed that we succeeded from the heart rather than from the head." Truly, every achievement is the shadow of a man. Those cast by this hospital grow longer and broader, indicating the evolution of man, the march of civilization and the clinging influence of the great Physician who came to save.

This institution, old in years but kept young through its hopes and aspirations, being constantly modernized, often pioneering into new fields, is an expression of the public mind of the people of New Jersey, a composite picture of their social morals, their charity and Christianity in its broadest sense, and it is as well a monument to the most advanced civilization of her people.

For the moment, speaking for the organized medical profession of the United States, almost 100,000 ethical, earnest men and women, I congratulate the people of New Jersey, compliment its medical profession and approve the direction, the length and the number of steps it has taken towards ministering to minds diseased.

Following Dr. Work, Dr. Albert M. Barrett, of the State Psychopathic Hospital, Ann Arbor, Mich., President of The American Psychiatric Association, was introduced. Dr. Barrett said:

An occasion such as this has a significance that is important not alone as an evidence of the progressive interest shown by this state in the development of its own hospitals for mental diseases, but it is one of a number of incidents that have taken place throughout this country in recent years that

show that public institutions are impressed by the feeling of the need of making their work and facilities more widely of service to the state in directions not hitherto followed and of adapting their organization to many new problems of medical and social relations that have been brought into the foreground. About 25 years ago there began in this country a notable renewed interest in psychiatric medicine. This took form in a few hospitals in a marked improvement of standards of their medical and psychiatric work, a more systematic study of their patients, and the establishment of laboratories for scientific research as an essential part of their institutions. From these hospitals there spread a widening circle of influence that forced attention to the needs of special hospitals for psychiatric research and teaching in connection with medical centers.

As the usual state hospital for the care of mental disorders had been assigned to quite specific problems that had grown out of their development along traditional lines that had been shaped to meet urgent problems in which custodial problems had to be kept in the foreground, it was felt that the needs that were now presented could only be met by the establishment of an entirely new type of hospital. It should be an institution that should care for types of mental disorders that were not provided for in existing state hospitals and emphasis should be placed upon observation, diagnosis and research rather than custody or prolonged treatment. It should, if possible, have close relations with an educational center and utilize its facilities in providing psychiatric instruction to medical students. Such an institution came to be designated as a psychopathic hospital.

The first unit of this type was established at Ann Arbor in 1905 in connection with the University of Michigan. A few years later other psychopathic hospitals or clinics were established in Boston and Baltimore, and there are now in process of completion similar types of hospitals in Iowa City and Chicago.

The policy and field of work of each of these institutions have been developed to meet special facilities that they possessed, or from problems growing out of their situation. In some emphasis was placed upon teaching and treatment, some had to serve the needs of a muncipality and others those of a state as a whole.

While there is needed in every state a state psychopathic hospital as an independent unit many of the activities that have been developed in connection with these organizations can well be carried on by special arrangements in the large state hospitals already established.

It is, I infer, for purposes such as these that the excellent buildings, whose opening we are now celebrating, have been established at this hospital. In assuming the functions that characterize the modern psychopathic hospital, the state hospitals for mental disorders depart from the limited field of operation that has been traditional and enter into new relationships. The possibilities of useful service that are opened up by this step raise the question as to just what should be the field of work for a modern state hospital for mental disorders and what should be its relation to mental

disorders as problems of public health. The modern hospital for mental disorders, if it is to keep up with advances in medical and social progress, must get beyond the restricted field it has hitherto occupied. It must recognize that in dealing with mental disorders we are concerned with the effects of complex influences that have determined the psychiatric problems of the individual when he enters the hospital for treatment. No one cause can be held entirely responsible for the breakdown of the mental health of the individual patient. We are concerned with forces that have determined the physical and mental constitution of the individual. Some of these have had their origin and shown their effects long before the birth of the individual; others have come from the environment in which he has been raised and has lived. We are concerned with factors that go to make up his character, the influence of affective forces in shaping his habits and ways of handling life's problems. We are concerned with the effects upon his constitution and character of physical and nervous disease. All of these in complex interrelations and quantitative differences have shaped the symptoms and the personality of the patient the hospital is called upon to treat. As one bears these matters in mind and surveys the facilities that are available for, in any way influencing these for the better, one cannot escape the conviction that we are making but a very ineffective attack upon the entire problem.

Involved in the problem of mental health are the most far reaching relationships that affect our whole social and national life and ramify in ways that can only be vaguely appreciated. No other agency except the state hospital with its accumulated experience is at the present time so well fitted for aiding in much that is involved in this problem.

If the factors that are causing mental disorders have been active all through the life course of the patient, then they have paralleled these problems of treatment, and could the seriousness of these have been appreciated by the individual or his family or had the state been mindful of these, then the later effects in the broken down mind, that the hospital must now care for, might have lessened.

State hospitals become utilized in this situation only at the last when pathological qualities have so often become too fixed and complicated to yield to treatment or nervous disorders so advanced that they are beyond modern ability to benefit.

State hospitals for mental disorders have been accustomed to have their problems and lines of activity determined through direction from outside their own administration. Their position as utilities of the state has been marked out for them by urgent needs of handling situations that confront social order in the communities and state, and have not been determined by what psychiatric experience believes might be more effective.

Our state hospitals are to-day at a point where they must frankly meet the question of whether they are to confine their energies only to the treatment of patients while in the hospitals or whether they are to extend their activities into the communities, and make more widely available the experiences they have acquired in the care and treatment of the mentally ill.

Our public hospitals for mental disorders are state institutions and as such the state has a right to expect them to take an initiative in efforts at preserving the mental health of the citizens of the state. Physicians of our state hospitals have had experiences in the problems of mental disorders that are not generally a possession of the general practitioner of medicine nor of those who usually deal with matters of public health. Psychiatric knowledge has been largely acquired and kept within the walls of our institutions and it is but natural that the state should turn to these for help in making any attack upon the menacing burden that it is having in caring for the mentally ill.

Unless the hospitals do take some initiative in this matter the situation will remain unchanged. They must prepare some program that will appeal to the state as reasonable and as worthy of financial support. Just what this program should be can only in a discussion such as this be merely suggested. The first step in such a program involves the establishment of contacts between communities and hospitals that do not now exist. These can be best brought about through the establishment of agencies or centers in the large communities that may be supervised and directed by the state hospitals. These agencies would serve as "liaisons" between hospitals and communities. To these the mentally ill might come for competent psychiatric examinations and advice. Welfare organizations of wide range of social interests could call upon them for help in their own problems involving mental aspects. The hospital could utilize these for obtaining information regarding patients committed to their care and it could assume for the hospital the carrying out of such measures for discharged patients as are essential for his continued health. It would be essentially a dispensary service supervised by a state hospital, and recognized by the state as a necessary function it should assume in caring for problems that center in the treatment of the mentally ill among its citizens. But proper treatment of many who are ill in mind cannot be carried on under the situations that must exist in an ambulatory clinical service. The problems of many who are mentally disordered are such as to require their removal from the usual surroundings and to be provided with bed care and the ministrations of physicians and nurses, conditions that can only be obtained in a hospital. To meet this situation it is essential that the formalities under which patients may enter a state hospital should be relieved as far as possible of anything that embarrasses patients unduly, and thus makes it difficult for them to accept the conditions under which treatment is offered. At the present time the legal formalities that are prescribed for the admission of a patient to a hospital for mental disorders are in most states of a character to cause the patients or his friends to hesitate before taking the needed step.

On the part of the state hospital, to meet the situations that must come up as the institution increases its extramural activities, there will be needed special buildings or units that have as their function the treatment of the early phases of mental disorders and those who are mentally abnormal but not insane. No hospital can make a desirable approach to the treatment

of this class unless it has arrangements for carrying on the treatment in a special unit, apart from the larger mass of its population. If this is done it becomes much easier to bring patients early under treatment.

Such arrangements are made possible in the establishment of psychopathic divisions among the other units of a hospital group. Whatever functions may have been planned for these excellent new buildings whose establishment we are now celebrating, I feel sure that they will be adaptable to the problems we have just presented.

The psychopathic unit should be the intensive medical center of the hospital as a whole. While medical interests will obviously in any good hospital extend through its entire organization it is essential that there be one unit in which there is specially dominant a spirit of scientific investigation. It is those who are among the early and borderline types of mental disorder that afford the best opportunity of studying problems of disturbance of mental and nervous functioning in the clearest way before they become obscured or too much intermixed with artificial symptoms or habits or are modified by deterioration. The psychopathic unit might well be the center for the supervision and direction of the outlying community contacts. Its laboratories would be called upon for diagnostic aid and the patients in its beds could in large part be drawn from these services.

No hospital can in the present day hold the interests of its medical staff unless it fosters a spirit of scientific investigation in the problems of its patients. A great difficulty that confronts hospitals for mental disorders, at the present time, is that of keeping its staff filled with well qualified physicians. The one factor above all others that will attract and hold the really desirable recent graduate in medicine to the service of a mental hospital is a good opportunity for continuing the scientific interests he has developed in his medical course.

Psychiatric advancement can only be maintained by continued productive research. This field as a whole has been somewhat backward in this country in this respect, when compared with what is being done in other branches of medicine. Contributions of high quality to current psychiatric literature are by no means abundant enough to meet the needs of the special journals devoted to the interests.

Psychiatry has since the war attained a position in the foreground of public health problems, and earnest effort is needed to keep it in this position. It has been shown to have contacts with so many aspects of medical, social, industrial, military, and educational relations that many avenues for research are opened up that cannot but in small part be carried on in the usual clinical or pathological laboratory.

As one recalls the relationships of mental disorders that we outlined in the beginning of this discussion, it can be seen that lines of research may be undertaken in a wide range of problems, any of which may be expected to give helpful additions to our psychiatric knowledge. Many formulations of theories and shaping of research investigations may be wrong and there will inevitably be much that will be discarded, but even negative results have often shown much that is of value.

What line of research should be carried on in a particular hospital depends largely on local facilities of this hospital and the interests of the medical staff. The aim of research is ultimately to give help to the individual patient, to point the way to successful treatment.

The one great point that psychiatric research has given to us is that the line of attack upon mental disorders lies in their prevention rather than in the possibilities of extensive cures after they have developed. Compared with other disorders of a medical or surgical nature we are dealing in mind disorders with the involvement of an organ whose functions are so intimately integrated in all physical health and social activities that any disturbance of this presents serious and far reaching consequences and greater difficulties of treatment. In spite of any conceivable advancement that may be made, treatment of mind and brain disorder must have distinct limitations. But in most instances somewhere in the past of the relations of the disordered individual there were factors or situations that were amenable to treatment and which if properly met would have prevented the problem that now concerns us. When we consider the influence of syphilis, of alcohol, of the perpetuation of degenerate stock and the transmission of pathological defects; the effects of epidemics of infectious diseases, the influences of bad personal hygiene on the production of vascular disorders; and the effects of faulty education and home training, we come upon concrete instances of causes that are responsible for a high proportion of the disorders we are called upon to treat. All of these causes are capable of prevention.

Research has contributed much and now the urgent problem is to put this into practical use. We are to-day burdened by the effects of influences that have acted harmfully in the past, and from these we have accumulated the problems that are now giving us concern. The unpleasant feature is that we know these factors are still active in our present day life and some are even increasing.

While our civilization brings with it uplifting influences, with these go serious, harmful tendencies, and it is not easy to maintain a normal state of mental health. To preserve this health requires active interests on the part of all organizations whose experience has qualified them for dealing with these matters, and in this work our state hospitals for mental disorders must take a leading part.

Dr. Barrett's address was followed by some remarks by Dr. Henry B. Costill, President of the N. J. Medical Society. Dr. Costill said:

Dr. Cotton, distinguished guests, ladies and gentlemen: This is indeed a great privilege to be before you to-day at the dedication of these buildings and to assure you of the cooperation of the State Medical Society in institutional work. This is not to be taken as an indication that the State Medical Society has not been cooperating, for if you would visit any of the general hospitals and see the remarkable amount of work that is being

done in the removal of tonsils you would come to the conclusion that the medical profession is following the teachings of our esteemed Dr. Cotton.

* * *

There is one thing I would like to speak of this afternoon and that is the economic side of institutions of this kind. It has been well said, and truthfully stated, that it is within the memory of most of us present when this institution, as well as all other state institutions of its kind, was called an "insane asylum"; they were merely detention institutions. People entered there and were well taken care of, but treatment, with the idea of returning people to health and usefulness, was a matter to which very little attention was paid. Far back, or very early in the history of our race, this question was propounded, a question which has been answered in very many ways depending very largely upon the state of consciousness of the individual.

These institutions with their research work and further development for the study of mental diseases, at the present time, is the answer of New Jersey to that question. Hospitals, of whatever character, are economic propositions. To found and maintain a general hospital is looked upon as the very best investment a community can make. It assists in returning to the community at the earliest possible date those who have been unfortunate enough to be injured or are ill. A high rate of health is the greatest asset of any state or community. Consequently, those who are unfortunate enough to be ill in mind by coming to an institution of this kind can be properly cared for, treated and returned as useful individuals to the community, and this is one of the greatest advances in the field of medicine. This advance, as I have stated, has not come all at once. It has come after hard work and a very great deal of research.

Our state is now engaged in looking after various state centers known as rehabilitation centers where people who are injured or are physically ill receive expert treatment and are returned as useful citizens to the community. This institution is one of these centers. Institutions of this character should be centers of this kind, centers not only for the consideration of mental problems, but for the education of the people at large and of the medical profession. It is a well known fact that the average physician knows very little of mental diseases, and it is from centers such as this that he should learn to help take care of these cases, or at least recognize them and have them treated here.

The medical profession has also dreamed of such an institution as this. No one has been better acquainted than the physician with the almost hopelessness of the condition of those who have gone astray in their minds, and welcomes such an institution, and I can assure Dr. Cotton that he has the urgent cooperation of the Medical Society of New Jersey in the work he has done and is doing here. I would like to say just this that in this work that he has been so actively engaged in, in the founding of this institution, and in the work that has led up to it, he has built a foundation for the benefit of the health of the people, of which each succeeding generation

will reap the benefit and generations to come will rise up and call him blessed.

The last speaker was Dr. Stewart Paton, in honor of whom one of the buildings was named. Dr. Paton said:

Ladies and Gentlemen: In the life of every person events occasionally occur that are responsible for what an English poet has felicitously called moments of "expressive silence." You will readily understand why my silence on this occasion would be more expressive than words. The inclusion of my name, however, on this program compels me to break what would otherwise be an expressive silence.

It is impossible for me to tell you how profoundly appreciative I am of the honor of having my name associated, not only with one of the new buildings of this great hospital, but with the state's tribute to the memory of that remarkable woman, Dorothea Lynde Dix.

The sight of these new buildings will always recall to me both personal and professional interests. They will always be associated in my mind with recollections of the devotion of a pupil and friend, the Medical Director of this Institution, Dr. Henry A Cotton. They will also be objective evidence of the reason for our uniting to-day in congratulating Dr. Cotton, the Board of Managers, and those associated with them, upon the erection of these buildings, an occasion that marks an important event in the history of this state.

If it were possible for Dorothea Dix to be present on this occasion she would rejoice as we do over the increased opportunities now provided for bringing the resources of modern medical science to the assistance of those suffering from nervous and mental diseases. She would also understand that it is not only in reference to the actual treatment of disease that these new buildings should be considered. They give to the medical profession better opportunities to study the causes and methods of preventing emotional and mental maladjustments in living; and they also make it possible to organize and conduct in this community a more successful campaign than has hitherto been carried on against what had probably become the greatest single manace to the progress of civilization—nervousness.

Nervousness or civilization shock is a popular expression for a variety of symptoms that indicate an enormous number of people are failing to adjust their lives emotionally and mentally to the complex organization man has created and called Civilization. Nervousness always indicates friction, worry, as well as waste of energy. It is an indication of those disorders of the human personality that increase the difficulties of effective service, and of cooperation between individuals, communities, nations and races. As we come more and more to realize the importance of studying the human personality, in order to obtain the information essential for leading sane, well-balanced lives, as well as for preserving the peace of the world, it will become evident that investigations carried on in these clinics supply the information essential for the teacher, social reformer, clergy-

man, stateman, and all those persons who are engaged in any attempt to regulate human lives and to improve the conditions necessary for the progress of civilization.

Democracy to-day is on trial. We do not yet know whether this country can be made safe for democracy. The first step in this direction is to learn how to use and conserve the brain power of the nation that now, like our forests, coal supply and other natural resources, is being insanely wasted.

In these clinics are provided opportunities to study all the different phases of modern unrest, disorganizing forces, operating in the home and schools and that are the chief causes of the failure to secure better cooperation between Capital and Labor, and that are also responsible for the wave of crime now sweeping over the country and for the emotional disturbances that menace the peace of the world. What folly it is to expect nations to disarm until man has taken the trouble to learn how to curb and regulate his emotions. Have we any right to expect that Democracy can be preserved until the attention of the public has been directed to the problem of learning how to use to advantage the brain-power of the nation? The public support and interest in the work carried on in these clinics is an excellent measure of the public's interest in solving the problems of Democracy.

THE NEXT ANNUAL MEETING OF THE AMERICAN PSYCHIATRIC ASSOCIATION.—The next annual meeting of The American Psychiatric Association, the seventy-ninth, will be held at the Hotel Statler, Detroit, Mich., June 19-22, 1923.

Book Reviews.

Psychology: A Study of Mental Life. By R. S. Woodworth, Ph. D. (*New York, Henry Holt & Co., 1921.*)

If all the authors of psychological texts should give average ratings of their respective productions, the standing of this book would be not less than second. It is probably among the most carefully prepared books that have been published. It was tried out in mimeograph for two years at Columbia and elsewhere, and subject to constant revision from various sources. It is thus a more objective work and less of a gospel according to Professor So-and-So. At the same time it embodies distinctive and very important conceptual progress. For example may be cited the recognition of sensation as a form of reaction. This matter is now relegated to a single late chapter, with insult added to injury in the assurance that on initial reading it "might perfectly well be omitted." The concept of preparatory reactions is another one of outstanding value. The style is somewhat colloquial, and on this ground has been a little disquieting to the conventionalist. It is admirably clear. One might go on with laudatory adjectives indefinitely. There can be little dissent that Professor Woodworth has done what he set out to, supremely well.

So long as present tendencies in the college teaching of psychology continue, so long will this book have a usefulness not incomparable to the classical work of James. The chief things that can modify its usefulness are the growth of knowledge—which every scientific book as such is ready to face—and the shifting of emphasis to other topics—as from James to Titchener, from Titchener to Woodworth. The accession of new facts partly determines such shifts of emphasis. At present the focus of psychological teaching is on the higher mental processes, with which over half of Woodworth's book is concerned. The reviewer joins in the enthusiastic welcome which his teacher's work has had on all sides. It deserves to mark perhaps an epoch, at least a "critical point" in the teaching of our science.

F. L. Wells.

The Defective Delinquent and Insane. The Relation of Focal Infections to their Causation, Treatment and Prevention. By Henry A. Cotton, M. D. With a Foreword by Adolf Meyer, M. D. (*Princeton, N. J., Princeton University Press, 1921.*)

Dr. Cotton's book is enthusiastic propaganda for his claim that chronic focal infection stands in a causal relation to the dementia precox and manic-depressive psychoses. The claim is disputed. Dr. Meyer in his preface to the book asks that criticism be constructive. Dr. Kopeloff and

Dr. Cheney have followed certain aspects of Dr. Cotton's work with entirely different results, but no one has followed all aspects of it or presented material which is closely comparable. Dentists and the general surgeons will have to evaluate procedures which lie wholly in their fields. This statement, for instance, will stand or fall according to the surgeon and not to the psychiatrist. "The mortality rate of resection of the colon has been materially lowered. This can be attributed to the routine pre-operative administration of a combined polyvalent anti-streptococcus and anti-colon bacillus serum."

The first 120 odd pages contain a discussion of facts and theories which are hardly to be objected to—every fact will mean more to one man than another and every theory can be accepted to a certain degree. While Dr. Cotton emphasizes physical and minimizes mental causes of mental disease, all readers will go a little of the way with him and some will follow to the journey's end.

But the group of 25 clinical cases which follow will leave many readers cold. There are presented 14 cases of depression or excitement which have cleared promptly after surgery directed against infection of mouth or cervix and the administration of vaccines. Other hospitals with other therapy might give parallel results. So with a paranoid and a mute patient, and four patients with excitements who recovered after resection of appendix or colon. There remain five cases: the first a recovery from a 19 years' illness after extraction of teeth and removal of an ovarian tumor; the second a recovery after enucleation of seminal vesicles from an apparent dementia; the third, a death due to general streptococcic infection in a manic phase; the fourth, a death due to widespread infection in a long puzzling case; and last, a case of "dementia præcox" which showed a recovery after extraction of teeth and tonsillectomy with autogenous vaccine, followed by a relapse and after removal of colon, a recovery.

Doubts arise not so much from the preceding cases at Trenton, but from the memories of other recoveries, improvements and deaths which in other hospitals and in private homes have followed many diverse therapeutic agents—or many lucky chances. No one can feel like shutting down on the detoxication procedures and the intensive treatment which must have at least some psychic factors. Nothing can be worse than a "do-nothing policy," but it is a question whether that term can rightly be applied to a scheme which tries to analyze the mental difficulty for a patient, to keep him well occupied, to support him with advice after removing all the physical handicaps which are considered such by the most competent physicians and surgeons.

It would be of tremendous interest to the psychiatric world if Dr. Cotton would hunt up all the failures of his system and set up before us the negative side of his work. This would include a study of admitted as well as discharged patients, to see whether his hospital population is built up any differently from that of a corresponding hospital in New York. And while Dr. Cotton was studying his failures, his critics might well study his successes.

E. D. B.

A Psychiatric Milestone. Bloomingdale Hospital Centenary, 1821-1921. (New York: Privately printed by the Society of the New York Hospital, 1921.)

The governors of the Society of the New York Hospital have brought together in a very attractive volume of something over 200 pages, the addresses delivered at the celebration of the centenary of Bloomingdale Hospital, held at the hospital at White Plains on May 26, 1921.

This JOURNAL has already given an account of the celebration with an abstract of some of the addresses, in the July, 1921, issue. A list of those present follows the addresses and then some appendices of historical or local interest.

The chairman of the occasion was Mr. Edward W. Sheldon, President of the Board of Governors, whose words of welcome were coupled with a brief sketch of the history of the Bloomingdale Hospital.

The addresses of Dr. Adolf Meyer, Lewellys F. Barker, George D. Stewart, Richard G. Rows of England, Pierre Janet of France, and William L. Russell, medical superintendent of the hospital, are all of a character befitting the occasion, and are a contribution to psychiatry which may well serve to mark this milestone in its progress.

The governors of the hospital have performed a distinct service to the profession by collecting these addresses and distributing them in a form which at once invites the reader's attention.

The volume is embellished with six illustrations. The frontispiece is a representation of the New York Hospital and Lunatic Asylum in 1809. There are three pictures of Bloomingdale Hospital, one as it appeared in 1821, one in 1894 and one of the new Bloomingdale at White Plains in 1921. One of the tableau pageants which formed part of the celebration is shown and a picture of Thomas Eddy, through whose initiative the hospital was built at its old site on Bloomingdale road.

There is one inaccuracy in the volume which deserves correction, and to which we trust we may call attention without the appearance of captious criticism. It occurs on page 85 in the words of greeting from the New York Academy of Medicine, so gracefully pronounced by its President, Dr. George D. Stewart.

He says: "In 1815 Bedlam Hospital in South London was converted into an asylum for the insane who were at that time called 'lunatics.'"

Bethlehem Hospital, now commonly called Bethlem Hospital, was founded as a priory of St. Mary of Bethlehem in 1247, one Simon Fitz Mary having given to the order certain lands and tenements in the parish of St. Botolph at Bishopgate, without, London, for the use of the order and the establishment of the priory.

At this place the buildings first used were erected. How long a time passed before the insane were cared for in what afterward became a hospital is uncertain, but it is known that the priory had in what is now Trafalgar Square a "Stone House" from which some time between 1375 and 1378 lunatics then confined were at the instance of the king removed to Bethle-

hem. In 1375 the place was seized as an alien priory by Edward III and for a long time there was a contention between the crown and the aldermen of London, who claimed under Edward III's charter the right of government.

In 1403 Henry IV issued a commission to two royal chaplains to investigate certain charges made against the management of the hospital as it was then called. This commission among other things reports concerning six men who were confined there who were insane (*sex homines mente capti*).

The original site is now occupied in part by Liverpool Street, and the stations of the Great Eastern, the North London and the Metropolitan railways.

In January, 1547, a few days before his death, Henry VIII granted a royal charter to Bethlehem and it became the Bethlehem Royal Hospital.

In 1675 a new and much more elaborate hospital building was erected in Moorfields, and here Bethlem remained, under varying conditions but always as a place of care, such as it was, for the insane until 1815, when on August 24 the patients were removed to the new hospital in St. George's Fields, Southwark, which is still in use.

Bethlem Hospital has been for years one of the most progressive institutions in England and has the place of honor as the oldest hospital for the treatment of mental disorders now in existence.

It is of interest that, like Bloomingdale, its governing body is called governors, and like Bloomingdale's parent institution, the New York Hospital, it has a royal charter

Abstracts and Extracts.

PRIDEAUX, E.: *The Expression of Emotion in Cases of Mental Disorder as shown by the Psycho-galvanic Reflex. From work carried out at Cambridge for the Medical Research Council.* (The British Journal of Psychology, Medical Section, 1921. 2, 23-46.)

This article is concerned chiefly with the experimental results and the interpretation of the results obtained when using the so-called psycho-galvanic reflex in studying the visceral expression of emotion. The author has summed up the article in a very admirable manner which brings out the ideas which he wishes to convey. It may be said that it embodies eight main points as follows: The term 'emotion' is used as a subjective feeling consisting of central excitement and consciousness of visceral sensations. The James-Lange theory is untenable except in a very modied form. The psycho-galvanic reflex is in the same person at the same time and under the same conditions an indication of the intensity of crude emotions as subjectively experienced. There is considerable variation in the amount of the reflex in the same person at different times due to such causes as fatigue, alcohol, menstruation, etc. The psycho-galvanic reflex is not necessarily a criterion for comparing emotional reactions in different persons, unless we accept the James-Lange theory—taken by itself it only indicates the reactivity of the skin. However, it seems to be a criterion of the amount of visceral sensations which are the concomitants of emotion and which reinforce what would otherwise be only a momentary excitement. The psycho-galvanic reflex is conditioned by the state of the cerebral cortex, but the relative parts played by the condition of the skin, the optic thalamus, and the reactivity of the autonomic nervous system have to be determined. In patients with definite cortical degeneration or mal-development the reflex is very small or non-existent, in cases where organic changes in the cortex are probable it is comparatively small, and in others in whom there is no evidence of cortical change it is much larger. The view of James and Janet that the emotions of the hysteric are largely artificial is probably correct.

J. S. ROONEY.

JUNG, C. J.: *The Question of the Therapeutic Value of "Abreaction."* (The British Journal of Psychology, Medical Section, 1921, 2, 13-22.)

Abreaction, the rehearsed experience of the trauma, is applicable only to the genuinely traumatic neuroses; it is valueless in the common neuroses caused by a morbid one-sided, slow development of the personality. Even in traumatic cases, as McDougall has pointed out, the essential fact is the

dissociation, not the intense affect. And abreaction is inadequate in even these few cases. The patient is unable to master his dissociation without a personal relationship to the physician.

The relationship exists first in the form of a transference. This should not be of the strongly sexual type, such as evolves when the physician gives an exclusively sexual interpretation of dreams. Such an analysis of abnormal functions into their unsavory elements is but a part of the truth, and it little helps the existing inferiority.

When the projections that constitute the transference are analyzed and it disappears, the second form of personal relationship should arise. The dependence characteristic of transference gives way to equality. The patient confronts the doctor with the merciless criticism which he has learned from the latter. The morbid element is not to be simply extracted; it must be transformed. This entails heavy demands on the mental and moral nature of the physician.

ALBERT F. BUCK.

INMAN, W. S.: *Emotion and Eye Symptoms.* (Br. Journ. Psychol. Med. Sect., 1921, 47067.)

During the past fifty or sixty years too much emphasis has been laid upon errors of refraction as causal factors of numerous symptoms of ill-health, such as headaches, tics, insomnia, inability to concentrate attention, photophobia, mental dullness, squints, etc. The mental and emotional state of the patient has not been considered. The premise of this paper rests upon the statement that the eye rarely produces other than ocular symptoms, unless the patient is emotionally unstable, in which latter case he is frequently not relieved by glasses but by suggestion or else by some adjustment of the inner life usually unknown to the oculist. Errors of refraction occur to a certain extent in the majority of the populace (probably 90 per cent would not be an over-estimate). Why do some suffer and others not? Brow ache, due to the overaction of the frontalis and orbicularis, is common where a prolonged effort has to be made to overcome a considerable error of refraction, the facial muscles attempting to assist the purely ocular muscles. But an ache in other parts of the head is to be regarded with grave suspicion by the ophthalmic surgeon as belonging to a more general functional nervous disorder. In support of his premise, the author recites numerous cases of convincing evidence, both in children and adults, of emotional stress or shock, such as maladjustments, misunderstandings, phobias, sexual difficulties, sublimated desires and complexes, causing symptoms which sent the patients to an ophthalmologist. In an answer to the question, "When did you have a nervous breakdown?" it is astonishing how often a history was obtained from these patients. In the cases cited, relief from the physical symptoms followed upon relief from the emotional cause, in most cases the error of refraction being so slight as not to necessitate glasses.

S. ALLEN.

YERKES, R. M.: *A New Method of Studying the Ideational Behavior of Mentally Defective and Deranged as Compared with Normal Individuals.* (Journ. Comp. Psychol., 1921, 1, 369-394.)

This article was written in 1916. It describes in detail and illustrates with pictures the method and apparatus of the first multiple—choice experiments that were made with humans. The work was done at the Boston Psychopathic Hospital. "The nature of a typical relational problem may be indicated by a simple example. Let us suppose that a group of like objects is placed before a subject. Some member of the group we shall define as the object to be selected or chosen by the subject, choice of it resulting in the obtaining of a reward, or the announcement of success. Let us further suppose that the right object, or the one to be chosen, may be adequately defined only in terms of its relation to the other members of the group. In case of a given problem, the relation might be *middleness.* Obviously, if the subject were told in advance, or by his own observation discovered this definition, he should be able to select the right object immediately from any group which happened to be presented. To be sure, if the number of objects in the group became very great, the task of selection would be correspondingly difficult." "A problem was considered solved as soon as a subject stated correctly the relation of the right key to the other members of the group, and *the number of trials preceding the first initially correct trial* after which no errors appeared was taken as a measure of the rapidity of solution."

With further development of his method the author improved the form of his apparatus and he recommends that the improved form of the keyboard apparatus be used for human subjects except where comparison of results with those obtained with lower animals is contemplated. The article includes a bibliography of multiple-choice method to 1921.

B. J. JONES.

Obituary.

EVELINE P. BALLINTINE.

Dr. Eveline P. Ballintine, a member of The American Psychiatric Association since 1898, died of carcinoma May 19, 1921, at her home in Rochester, N. Y. Dr. Ballintine was 69 years of age at the time of her death and had practiced her profession for 44 years. In 1877 she received her degree in medicine from the University of Michigan and from that time until 1891 she practiced in Le Roy, N. Y. In 1891 she gave up the general practice of medicine and associated herself with the staff of the Rochester State Hospital, which was at that time transferred from county to state control. For the next 30 years and until the time of her death she continued an active member of the hospital staff, where she contributed no small part to the development and progress of the institution. From 1904 on she was in active charge of the women's reception service, in which she took great interest and was a real consolation to all who became her charges.

Outside of the hospital she had interests in other medical matters and was a recipient of many honors. She was successively president and councilor of the Women's Medical Society of New York State and was once president of one of the Women's Medical Societies in Rochester, N. Y. Besides these affiliations, she was a member of county, state and national societies and made many contributions to medical literature.

Dr. Ballintine represented the highest type of womanhood, and, believing in the advancement of women into all fields of society, she never let an opportunity pass to promote the interests of her sex.

She is survived by four sisters and one brother.

E. H. Howard.

ANNA CRAIG.

Dr. Anna Craig, assistant physician of the Kings Park State Hospital, Kings Park, New York, died at Kings Park on March 21, 1922.

Dr. Craig was of Scotch ancestry and a direct descendant from Rev. Thomas Carter, who was ordained the first pastor of the Presbyterian Church at Woburn, Massachusetts, and who was also a friend and classmate of John Harvard, the founder of Harvard College. Her family history is notable for the number who entered the medical profession. Her granduncle, father, two sisters, nephew and several cousins were physicians.

Dr. Craig was born at Churchville, Monroe County, New York, July 29, 1856. She received her preliminary education at Geneseo State Normal School, graduating in 1880. She then taught school 12 years before she began the study of medicine at the age of 34. She, as well as her two sisters, were encouraged to take up a medical career by her father, who was a graduate of Jefferson College and practised in Churchville nearly 50 years.

Dr. Craig attended the University of Michigan, receiving her degree in medicine in 1893. Following this she practised medicine in Rochester, N. Y., five years.

On May 4, 1898, she was appointed woman physician at Kings Park State Hospital, and on January 1, 1911, changed to the grade of assistant physician, which position she held up to the time of her death.

Dr. Craig was a charter member of the Woman's Medical Society of New York State and held office many times. She was also a charter member of Medical Women's National Association, and a member of The American Psychiatric Association, Woman's University Club, New York City, Association of University Women and Clionian Society Alumnæ, New York City.

In 1897 Dr. Craig traveled in Europe. She had always been a student of art.

Dr. Craig devoted the most of her medical career to the service of the state institution at Kings Park. She was always intensely interested in the development of the hospital and ready and willing to participate in any movement to improve the standards of care. She promoted and supervised the establishment of a club for employees and the setting aside of a building for its club house. She also established a school in one of the wards where kindergarten, drawing and elementary subjects were taught with resultant great benefit to the patients. She was one of the first to

recognize the importance of occupational therapy and a generous amount of amusement for the insane, and was foremost in their application.

Dr. Craig will be remembered for her nobility of character, adherence to the highest professional standards, extreme loyalty to the interests of the hospital, vivacity combined with modesty and gentility, and numerous other attractive personal qualities which endeared her to a large circle of devoted friends.

Dr. Craig's death came suddenly and unexpectedly from heart disease. She was stricken while attending a meeting of the hospital medical society and died within a few minutes after being carried to her room.

RUSSELL E. BLAISDELL.

LEONA E. TODD.

Dr. Leona E. Todd died at "Brookside," Willard, New York, the home of her sister, Mrs. Robert M. Elliott, February 21, 1922. A daughter of William and Angeline Todd, she was born at Reynales Basin, Niagara County, New York, in 1870, receiving her preliminary education in the local public school and at the State Normal School at Brockport; she entered Cornell University in 1889, receiving her Bachelor of Arts degree in 1903, taking the scientific honors of Sigma Xi. She at once entered the medical college of Cornell and received her Doctorate of Medicine in 1905. She was house physician at the Memorial Hospital in Worcester, Massachusetts, for one year, after which she took up general practice in Auburn, New York, which she successfully followed for four years. She entered the New York State Hospital service at the Hudson River State Hospital May 20, 1911, as woman assistant, and was transferred to the Buffalo State Hospital and promoted to the grade of senior assistant February 1, 1920, where she continued her work until the onset of her illness, December 1, 1920. She was a member of the Medical Society of the State of New York, the American Medical Association and The American Psychiatric Association.

Dr. Todd was a woman of unusual ability, noble character and charm of manner. Her scientific work, together with her unfailing kindness to her patients, attracted universal attention. In

Dr. Todd's death the insane have lost a true friend and the hospital service a faithful officer.

ROBERT M. ELLIOTT.

STEPHEN WARNER PERRY.

Dr. Stephen Warner Perry was born in Cleveland, Ohio, on January 6, 1874, and graduated from the Western Reserve Medical School of that city. He pursued his medical studies in Vienna for about a year, after which he returned to Cleveland and practiced for some time, later removing his practice to Belchertown, Mass.

At the outbreak of the Spanish-American War he joined the 19th Infantry as surgeon, and he continued in service until the close of the war.

On December 16, 1903, he married Miss Sara Servin at Warwick, N. Y. He resumed and continued his practice in Belchertown for some years, and in 1916 removed to Bainbridge, Ohio, where he practiced about a year.

On June 1, 1917, he was commissioned captain in the Medical Corps of the U. S. Army, and on August 9, 1917, was assigned to duty at Fort Benjamin Harrison; later in the month he was transferred to Camp Custer as Regimental Surgeon of the 310th Engineers with rank of Captain. In January, 1918, he was promoted with rank of Major. In September, 1918, he was made surgeon of the 78th Infantry, 14th Division. In February, 1919, he was transferred to the Base Hospital at Camp Custer. On August 18, 1919, he received his discharge and accepted a position on the medical staff of the Kalamazoo State Hospital.

Dr. Perry was very efficient and active in the performance of his duties at the State Hospital, where he was given entire charge of the Colony. In addition to his regular duties there, he rendered efficient assistance in the acute service in the examination of new admissions.

On February 7, 1921, he was taken ill with a severe attack of influenza and unfortunately attempted against advice to resume his duties before fully convalescing from this attack. This resulted in a serious attack of acute dilatation of the heart which confined him to his bed until May, 1921, when he left for Spring-

field, Mass., to recuperate. The doctor either failed to or was unwilling to recognize the seriousness of his condition, and the fact that he became much more comfortable lent false hopes for ultimate recovery. On February 8, 1922, he went to Bradentown, Florida, for beneficial results to be obtained from a warmer climate. He died rather suddenly on March 17, 1922.

Dr. Perry was Past Master of Vernon Lodge F. & A. M., Belchertown, Mass.; a member of Mount Vernon Chapter 97, O. E. S.; Kalamazoo Chapter No. 13, R. A. M.; Michigan Consistory of Detroit and of Saladin Temple, Grand Rapids, Michigan. Also a member of Joseph B. Westnedge Post No. 36, American Legion of Kalamazoo.

In 1920 he was elected an associate member of The American Psychiatric Association at the Cleveland meeting.

He is survived by his wife, Sara Servin Perry. Dr. Perry leaves a host of friends who regret that so promising a career has terminated so suddenly and untimely.

HERMAN OSTRANDER.

JOSEPH M. RATLIFF, M. D.

Dr. Joseph M. Ratliff was born in Cincinnati, September 3, 1848, and died November 5, 1921. He was a graduate of the Ohio Medical College, class of 1873. Was a veteran of the Civil War, having served as private at age of fifteen for four months.

In 1880 he was appointed assistant physician at the Longview Hospital, Cincinnati, in which position he served the state for fourteen years. He was elected Superintendent of the Dayton State Hospital in 1894 and served in that capacity for eight years. He purchased the Grandview Sanitarium in 1914 and served there as Medical Director until his death. He was neuropsychiatrist on an advisory board during the world war; an active member of the American Medical Association, and for twenty-seven years a faithful member of The American Psychiatric Association.

Dr. Ratliff was a man of rare personality. He was genial, cheerful and his presence was a constant benediction to his patients, by whom he was greatly beloved. His ability to conquer the detail work of a great institution was almost incredible. From

boyhood Dr. Ratliff was of a happy, cheerful disposition, and was particularly beloved for his integrity. His observant mind and wonderful memory for details made him a power in our State Conferences. He was the kind who always wanted to know why. He was not considered a brilliant man of the meteoric variety by his comrades, but was beloved because of his deliberate, careful, conscientious and exhaustive examination of patients, and this placed him in the front rank as an insanity expert. He enjoyed life as few men do. He fully met the standard set by Epicurus: "It is impossible to live pleasantly without living prudently and honorably and justly: or to live prudently and honorably and justly without living pleasantly." His spirit was altruistic and his mind and body were used wholly for the betterment of his charges. His professional achievements are familiar to all, but it was only the privilege of those who came close to his inner life, who came in contact with the man, to know the richness of his friendship, to know the splendid quality of his soul and his love of humanity which ever dwelt within his unselfish nature.

H. C. EYMAN.

LEWIS H. GUNDRY.

Dr. Lewis Henry Gundry, owner and physician in charge of the Relay Sanitarium, Relay, Maryland, died on Thursday, September 15, 1921, at his home on the Sanitarium grounds, after an illness of several years.

Dr. Gundry was born in Dayton, Ohio, May 24, 1868, and he was the second son of the late Dr. Richard and Mrs. Mary M. Gundry. He moved to Maryland with his parents when a young boy, and his early education was acquired in the public schools and at Marsden's University School, Baltimore. He studied medicine at the College of Physicians and Surgeons, Baltimore, graduating in the class of 1890. Was resident physician for a year at the old City Hospital, after which he was assistant physician for several years at the Southeastern Indiana State Hospital, Richmond, Indiana. He resigned this position to enter the general practice of medicine in Baltimore, which he engaged in until 1903, when he purchased the Relay Sanitarium, which engrossed the greater part of his time until his death.

Dr. Gundry held the Chair of Mental and Nervous Diseases in the Maryland Medical College for a number of years, and did much consultation work. He was for many years an active member of the Baltimore County Medical Association, and served as its President. He also belonged to the Maryland Psychiatric Society, Medical and Chirurgical Faculty of Maryland, the American Medical Association, and The American Psychiatric Association.

Dr. Gundry is survived by a widow, one son, three brothers, and four sisters.